DOCUMENT RESUME

ED 127 482 CE 007 934

AUTHOR	Moldan, Carol; And Others
TITLE	Introduction to Vocations: Comprehensive Middle School Program.
INSTITUTION	Rutgers, The State Univ., New Brunswick, N.J. Curriculum Lab.
SPONS AGENCY	New Jersey State Dept. of Education, Trenton. Div. of Vocational Education.
PUB DATE	Jul 76
NOTE	139p.
AVAILABLE FROM	New Jersey Vocational Technical Curriculum Laboratory, Building 4103, Kilmer Campus, Rutgers University, New Brunswick, New Jersey 08903 ($3.00 plus postage)
EDRS PRICE	MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS	Career Awareness; *Career Exploration; *Curriculum Development; Instructional Materials; Intermediate Grades; Junior High Schools; *Lesson Plans; Middle Schools; *Occupational Clusters; Prevocational Education; *Teaching Guides

ABSTRACT

Specific emphasis of this handbook is on the integration of 15 career clusters into an existing curriculum for grades 7 and 8. It is intended particularly for teachers who are exploring the various occupational clusters for the identification of the various career opportunities with their students. The 15 occupational cluster topics included are: Agri-business and natural resources, business and office, communications and media, construction, consumer and homemaking, environment, fine arts and humanities, health, hospitality and recreation, manufacturing, marine science, marketing and distribution, personal services, public services, and transportation. Each cluster is presented as a unit of study of three to four weeks' duration. Example ideas for cluster-related lesson plans are provided for the areas of English, math, science, social studies, and other disciplines. Emphasis is centered around the Career Development theme which includes: (1) Student evaluation of his or her characteristics, (2) exploration of broad occupational areas, (3) introduction to the psychological and.sociological meanings of work, (4) introduction to the economic and social values of work, (5) identification and explanation of educational and skill development avenues, and (6) development of the student's process of decision-making. Each section includes an introduction to the occupational cluster, a listing of sample occupations, suggested learning activities, and resources. (Author/TA)

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ED127482

State of New Jersey
Department of Education
Division of Vocational Education

INTRODUCTION TO VOCATIONS
COMPREHENSIVE
MIDDLE SCHOOL PROGRAM

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U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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Vocational-Technical
Curriculum Laboratory
Rutgers – The State University
Building 4103 – Kilmer Campus
New Brunswick, New Jersey

Publication # 0038
July 1976

CE 007 934

CE 007 934

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This publication is one of a series of curriculum documents in career education written under the statewide curriculum development project conducted by the New Jersey Curriculum Management Center. Materials developed under this project are published by the New Jersey Vocational-Technical Education Curriculum Laboratory in order to ensure the widespread availability of these materials to practitioners in the field at a reasonable cost.

Dr. Joseph F. Kelly

Project Director
New Jersey Curriculum Management Center

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FOREWORD

This Introduction to Vocations Comprehensive Middle School Program Handbook deals with the fifteen occupational career clusters that can be implemented into an existing school curriculum for the use of seventh and eighth grade students. It is intended to be used as a teacher's guide with specific emphasis placed on cluster-related lesson plans and resources which are provided for in English, math, science, social studies, and the other disciplines. This publication is intended particularly for teachers who are exploring the various occupational clusters for the identification of the various career opportunities with their students.

Special recognition should be given to the New Providence Career Development Team of Carol Molden, Martin Pearson, Joseph Grosso, and Edward Rolek, who contributed their time and effort in making this career education project a successful endeavor.

John W. Williams, Director
Introduction to Vocations

Introduction

The New Providence career education project handbook is intended for use in grades seven and eight with specific emphasis upon its integration of the fifteen career clusters into an existing district curriculum. Each cluster is presented as a unit of study of three to four week's duration. Order of cluster priorities is set by student interest. (Questionnaire and surveys are included in the handbook.) Example ideas for cluster-related lesson plans are provided for in English, math, science, social studies, and other disciplines. The overall program lends itself to modification as a one-to three-year project depending upon the individual school system's time and resources.

Exploration and information on careers will be incorporated into the ongoing curriculum at these grade levels. This emphasis will be centered around the Career Development theme which includes: 1) the student's evaluation of his self-characteristics; 2) exploration of broad occupational areas; 3) introduction to the psychological and sociological meanings of work; 4) introduction to the economic and social values of work; 5) identification and explanation of educational and skill development avenues; and 6) development of the student's process of decision-making based upon the foregoing items.

Analysis of the above goals will lead to the development of six elements incorporated into the on-going curriculum at the seventh and eighth grade levels. These methods are: 1) hands-on activities; 2) role playing; 3) field trips into the community; 4) resource people from the community into the classroom; 5) subject matter tie-ins; and 6) introduction to occupations in the community relevant to each unit.

This unit method will be used as the structural framework for implementing the Career Development elements into the classroom program. The concurrent and overlapping nature of these elements encourages individual creativity and permits flexibility within any given unit.

To assist teachers in the planning and implementation of unit activities in their classrooms, curriculum resource outlines will be developed.

In the development and presentation of these unit guides, special attention will be directed toward making them an integral part of the ongoing curriculum.

Through the unit method, the Career Development approach: 1) gives the student learning by doing experiences; 2) points out the relationship and interdependence of subject areas to one another and to various work roles in the community; and 3) gives the teacher a vehicle for presentation of the existing curriculum rather than adding on additional subject matter. At this juncture there is neither intent nor desire to channel students into any occupational decision; rather, *the goal is to build a base of experience and exposure upon which the student can most effectively make decisions related to his next step in live-education.*

Teachers are assisted in their selecting activity-centered units; in planning instructional activities; in procuring materials and supplies; and in arranging field trips and for classroom resource persons by the Career Development team. The function of the Career Development team is one of support to the implementing teacher. In turn, the teacher incorporates Career Development activities into the ongoing curriculum.

Program Rationale

More and more studies point up the significance of decisions made during the middle school years that will have a lasting impact on an individual's life-long career style.

A foundation of self-understanding can be established during the pre-school through fifth grade stage. At that time the student can become aware of his individual capabilities as they relate to the environment in which he lives. Thus, he has the opportunities for self-discovery.

In the sixth, seventh, and eighth grades the student uses his basic sense of personal individuality and potential developed in the earlier grades for becoming involved in many new experiences. By middle school he is ready for a wide variety of action-oriented activities through which he can explore his capabilities in coping with new situations and processes. He is looking for challenges that he can interact with and conquests he can make.

The New Providence middle school program affords each youngster with his individual talents a means by which he can successfully meet a variety of personal challenges. Not with the intention of making final vocational decisions, at this stage in his development the youngster should be given assistance in exploring various career possibilities.

From a
Special Paper, May 1972
Bureau of Occupational Research Development

Career Clusters

Agri - Business and Natural Resources Occupations Cluster

Business and Office Occupations Cluster

Communications and Media Occupations Cluster

Construction Occupations Cluster

Consumer and Homemaking Occupations Cluster

Environment Occupations Cluster

Fine Arts and Humanities Occupations Cluster

Health Occupations Cluster

Hospitality and Recreation Occupations Cluster

Manufacturing Occupations Cluster

Marine Science Occupations Cluster

Marketing and Distribution Occupations Cluster

Personal Services Occupations Cluster

Public Services Occupations Cluster

Transportation Occupations Cluster

Aims for Career Awareness Program

1. Basic Educational Skills

   Students will develop and demonstrate comprehensive educational and employment skills leading to employment and/or continued education.

2. Career Awareness

   Students will gain knowledge about the range and nature of various careers. Educational and personal requirements will be included.

3. Self Awareness

   Students will gain insight into their values, interests, and abilities, and their interpersonal relationships as emerging factors in improving their educational and employment potential.

4. Appreciation, Work Attitudes, and Habits

   Students will recognize the contribution of work to our civilization and demonstrate initiative and responsibility for exploring and developing their individual potential.

5. Decision-Making Process

   Students will develop career decision-making skills relative to eventual experiences in education and/or employment.

6. Societal, Technological, Economic Understanding

   Students will gain knowledge of and relate to the economic, political, societal, and technological aspects of careers in our contemporary civilization.

From a
Special Paper, November 1972
Bureau of Occupational Research Development

Program Objectives

The following objectives are applicable to the seventh and eighth grade pilot program as it is being developed and implemented at Hillview School, New Providence, New Jersey. These objectives are observable and measurable throughout the course of the prescribed and teacher-innovated activities.

1. The student will be able to engage in self appraisal related to how people differ in skills, interests, and abilities and how these differences will affect an individual's career development.
2. The student will be able to understand the degree of practice and knowledge that is essential to attain skill status.
3. The student will become aware of the relevancy of school life and work.
4. The student will be able to perceive work as a function of man's pride, identity, fulfillment, and need for skillful and creative expression.
5. The student will be able to become acquainted with a wide variety of occupations through exposure and exploration.
6. The student will be able to appreciate all types of work and the individuals that participate in these occupations.
7. The student will be able to plan a foundation for career planning suitable to his own individuality.
8. The student will be able to understand the effect of attitudes and personality factors in school and occupational success.

From a
Special Paper, April 1972
Bureau of Occupational Research Development

Overview

A number of basic concerns control the development of the actual procedure for career exploration. To start with, the program is attuned to the needs of all students, both boys and girls. In terms of the inclusiveness of the range of occupations, all occupational areas, rather than one or two areas for boys and for girls are to be involved.

Action and involvement will be emphasized. Student abilities, represented in hobbies and reading interests, will be used. The career exploratory experiences will engage students in activities involving their full range of aptitudes such as spatial, mechanical, verbal, and mathematical, as well as reasoning.

The learning context will be a human one. Class activities will be organized to provide opportunity for growth in leadership, social development, personal responsibility, and peer relations along with the awareness of economic, social, and technological developments.

Current information about community resources is important. A major task will be to set up procedures for keeping up-to-date information regarding local resources for career exploration in New Providence.

While this program will attempt to deal with a cluster area as a total unit to be integrated into the various academic disciplines, it is recognized that this procedure may at times not be feasible due to the limitations of material, the scheduling of trips, and the securing of appropriate speakers. Nonetheless, it is an avowed intent of this procedure to coordinate topics and events as time permits while consistently maintaining the identity and importance of each career cluster area.

Procedure

Part I – Initial Student Involvement: Interest Survey (To be administered at beginning of seventh grade)

In order to develop student interest and motivation with regard to this project, the following survey will be utilized. It is felt that this technique will serve an additional purpose in that student responses and subsequent discussion will provide necessary input as to the direction the program should take. In this regard, while an attempt will be made to include the fifteen clusters, it is recognized that student interests will demand a greater degree of concentration in certain areas.

With the advice and direction of the middle school faculty, the career development team will determine the date, time, and place of administration of the following survey materials. Upon completion of these preliminary questionnaires, appropriate student-teacher discussion will follow. This procedure will determine the general direction of the students' career interest.

General Objectives

To assist each student in assessing his own abilities, aptitudes, and interests in relation to the world of employment.

To provide an order of priorities for the exploration of each cluster area.

EDUCATIONAL AWARENESS

Purpose:

The statements below will help you deal with your feelings regarding your educational and related occupational preparation.

	Fully disagree 1	Disagree 2	No strong feeling 3	Agree 4	Fully agree 5
1. It is important to me to earn good grades.					
2. My grades are important to my parents.					
3. My grades are important to my teachers.					
4. My grades are important to my friends.					
5. The following subjects are important to me. (Rate each subject.)					
a. English					
b. Mathematics					
c. Social Studies					
d. Physical Education					
e. Foreign Language					
f. Music					
g. Arts					
h. Other (fill in)					
6. What I learn in school will help me to be a success.					
7. I like to work with my hands.					
8. The longer I stay in school the more money I can earn in a job.					
9. I want a job which requires a college education.					
10. Failure in school means failure in a job.					
11. My father expects too much of me in school.					
12. My mother expects too much of me in school.					
13. My teachers expect too much of me.					
14. My mood affects my day in school.					
15. I work as hard as I can in school.					

	Fully agree 1	Disagree 2	No strong feeling 3	Agree 4	Fully agree 5
16. Being with members of the opposite sex interferes with my school work.					
17. I should develop an educational plan for the future.					
18. Cultural enrichment courses should be included in the school program					
Examples: Afro-American History Film-making Photography English Literature Other (fill in)					
19. It is important to me to finish high school.					
20. I feel that education is a very important thing in a person's life.					
21. Learning is easy for me.					
22. I have good study habits.					
23. I select after-school activities which represent learning experiences for me.					
24. All learning does not take place in school.					
25. Homework helps me understand my school work better.					
26. Learning is a continuous process.					
27. My school provides information about job opportunities.					
28. Different kinds of educational plans are needed for different jobs.					
29. It is important for me to continue my education beyond high school.					
30. The school program should include learning how to get a job.					
31. I should continually review my educational plans.					
32. How far I can go in school will affect my choice of jobs.					

	Fully agree	Disagree	No strong feeling	Agree	Fully agree
	1	2	3	4	5
33. My grades reflect my ability.					
34. I expect to develop job skills while in high school so that I can be ready to take a job when I graduate.					
35. The high school course which I choose will affect my plans for work or further education after high school.					
36. For every 100 people, only 12 to 15 of them need a college education to do their job.					

Revised from
Questionnaire from State of New Jersey, Department of Education
Division of Vocational Education
Used by Permission of Thomas Gambino, D.V.E.

CAREER AWARENESS

Purpose:

How you decide on what kind of education and job for which you will prepare depends on how you feel about things. The statements below deal with education, jobs, yourself, and procedures for deciding on a career area.

	Fully agree 1	Disagree 2	No strong feelings 3	Agree 4	Fully agree 5
1. I need to know what training and education certain jobs in my community require.					
2. I need assistance in finding jobs in the community.					
3. I need to develop skills for a job for which I wish to apply at this time.					
4. I need to know what skills I have which will be helpful to me in job selection.					
5. When I get a job, it is important to me to work with people with whom I can get along.					
6. I would be willing to move to another part of the country with respect to my work.					
7. Once I select a job, I cannot choose another job.					
8. I need to know how much education is required for certain jobs in which I am interested.					
9. Understanding my likes and dislikes is important in my job selection.					
10. My parents (or guardians) probably know better than anyone else which job I should choose.					
11. Knowing what I do well is important to job selection.					
12. Knowing what I like to do is important to job selection.					
13. Salary is the most important item to me in choosing a job.					
14. Promotions to a higher position are important to me.					

	Fully disagree	Disagree	No strong feelings	Agree	Fully agree
	1	2	3	4	5
15. Employment is a necessary part of life.					
16. It is important to think about jobs while still in school.					
17. A person is able to do any kind of work as long as he tries hard.					
18. It is important that my career plans are acceptable to my family.					
19. It is important that my career plans are acceptable to my friends.					
20. I like to work with groups of people.					
21. I like to work alone.					
22. To be happy on a job, I need freedom to do the job the way I think is best.					
23. I perform best when competing with others.					
24. I prefer to plan and organize the work of others.					
25. My job must allow me to pursue my interests.					
26. My physical make-up (size, strength, weight, etc.) will influence the kind of work I can do.					
27. Knowledge of professional organizations and labor unions is important.					
28. I would like my work to involve personal and social services. (Ex: teacher, homemaker, deliveryman, beautician, doctor, etc.)					
29. I would like my work to involve the natural environment. (Ex: forestry, ecology, geology, oceanography, etc.)					
30. I would like my work to involve my mechanical ability. (Ex: repairing, designing, operating machinery and equipment, etc.)					
31. I would like my work to involve my artistic ability. (Ex: artist, landscaper, painter, interior decorator, etc.)					
32. I would like my work to be in the field of business. (Ex: accountant, bookkeeper, banker, secretary, computer operator, etc.)					

	Fully disagree	Disagree	No strong feelings	Agree	Fully agree
	1	2	3	4	5
33. I would like my work to involve scientific research. (Ex: chemist, physicist, biologist, space, etc.)					
34. Most people find a job:					
a. Using the want ads in the newspaper.					
b. Using an employment agency.					
c. Through friends.					
d. Through radio and television.					
35. I would like a job where I would be expected to belong and participate in different social clubs and sports activities.					
36. I would be willing to move outside of the country with respect to my work.					
37. If I liked the work, it would not matter to me if it took two or more years of practice to become skillful.					
38. It is important to me to try to find a job that I will be proud to do.					
39. Today, many people such as technicians, craftsmen, mechanics, truck drivers, can earn as much as people with a college education.					

Revised from
Questionnaire from State of New Jersey, Department of Education
Division of Vocational Education
Used by Permission of Thomas Gambino, D.V.E.

OCCUPATIONAL INTEREST CHECKLIST

To the Student: The following checklist is not a "test," and there are no right and wrong answers. Simply go through the entire list of occupations TWICE, as follows:

Star (*) six occupations that you like BEST (even though you might think you do not have the ability to do them).

Next:

Check (✓) six occupations that you like LEAST and would not like to hold in the future.

The inventory can be taken at leisure. It is NOT timed, but do it quickly, or as quickly as you can.

Actor
Accountant
Advertising Agent
Aeronautics Engineer
Air Conditioning Mechanic
Architect
Artist (Painter)
Astronaut
Athlete
Auto Mechanic
Bacteriologist
Banker
Bank Teller
Barber
Beauty Operator
Bookkeeper
Botanist
Bricklayer
Builder (Contractor)
Butcher
Buyer (Department Store)
Cabinetmaker
Carpenter
Cashier
Chauffeur
Chemical Engineer
Chemist
Civil Servant (Government)
Cleaner or Dyer
Clerk (Department Store)
Clerk (Hotel)
Clerk (Office)
Clerk (Sales)
Construction Worker
Counselor (Camp)
Counselor (School)
Dancer (Professional)
Dance Instructor
Dental Mechanic
Dental Assistant
Dentist
Detective
Dietitian
Doctor (Physician)
Draftsman
Dressmaker
Editor
Electrician
Engineer and Building Superintendent
Engineer (Electrical)
Engineer (Mechanical)
Engineer (Civil)
Engineer (Railroad)
Factory Worker
Farmer
Fashion Designer
Fashion Illustrator
Fireman (City)
Fireman (Railroad)
Florist
Forester
Gardener
Grocer
Gunner (Navy)
Hostess (Airline)
Hostess (Restaurant)
Housekeeper
Illustrator (Magazine)
Interior Decorator
Industrial Engineer
Insurance Agent
Inventor
Jeweler
Journalist
Judge
Laboratory Technician
Laborer (semi-skilled)
Laborer (unskilled)
Lawyer
Librarian
Machinist
Machine Operator
Mail Carrier
Mechanic
Merchant Marine Sailor
Milliner
Minister
Miner
Movie Operator
Musician
Nurse (Practical)
Nurse (Registered)
Nurse Supervisor
Occupational Therapist
Officer (Air Force, Army, Navy, Marines)
Painter (House)
Personnel Manager
Pharmacist
Pilot (Airlines)
Pilot (Air Force)
Playground Director
Plasterer
Poultry Farmer
Policeman
Priest
Private Secretary

Occupational Interest Checklist (Continued)

Private Detective
Printer
Prison Warden
Probation Officer
Psychologist
Psychiatrist
Publisher
Rabbi
Radio Repair Technician
Radio and TV Salesperson
Radio-Telegraph Operator
Real Estate Salesperson
Refrigeration Service Mechanic
Research Assistant (Scientific)
Restaurant Manager
Restaurant Owner
Roofer
Salesperson (Inside)
Salesperson (Outside)
Secretary (Office)
Sign Painter
Singer (Professional)
Social Worker
Soldier (non-commissioned)
Stenographer
Supervisor (Dept. Store)
Surgeon
Surveyor
Tailor
Taxi or Bus Driver
Teacher (Elementary or High School)
Teacher (College)
Tool Maker
Tree Surgeon
Truck Driver
Typist
Undertaker
Upholsterer
Waiter
Waitress
Watchmaker
Window Dresser
Writer

WRITE IN ANY OTHERS YOU WANT TO MENTION:

Reprinted from *Guidance Techniques*, R. Wagner, pp. 68-69.

PHASING IN "MS. BUSBOY" AND "MR. MAID"?

Not exactly. But sexist job titles are being questioned.

Would a woman apply for a job as a foreman, salesman, or credit man? Would a man apply for a job as a laundress, maid, or airline stewardess? Probably not. Unless these job titles were changed to eliminate sex stereotypes.

That's just what the U.S. Census Bureau has done to 52 job titles in its Occupational Classification System. The aim is to eliminate the idea of so-called "men's jobs" and "women's jobs."

See if you can match each old job title on the left below with its new title on the right.

1. foreman
2. maid (household)
3. busboy
4. airline stewardess
5. fireman
6. clergyman
7. policeman
8. laundress
9. forgeman and hammerman
10. shoe repairman
11. structural metal craftsman
12. deliveryman
13. fisherman
14. longshoreman
15. warehouseman

A. waiters' assistant
B. firefighter
C. clergy
D. warehouse laborer
E. delivery worker
F. forge and hammer operators
G. longshore worker
H. fisher
I. private household cleaner
J. police
K. blue collar worker supervisor
L. launderer
M. structural metal worker
N. flight attendant
O. shoe repairer

From *Career Magazine*, March 1974

Introductory Audio-Visual Materials

Union County Film Library

B010 Appointment with Tomorrow
0702 Choosing Your Occupation
0066 Getting a Job
0705 Getting into College
0518 How to Keep a Job
0259 Personal Qualities for Job Success
0388 You and Your Work

Culminating Activities for Know-Yourself Unit

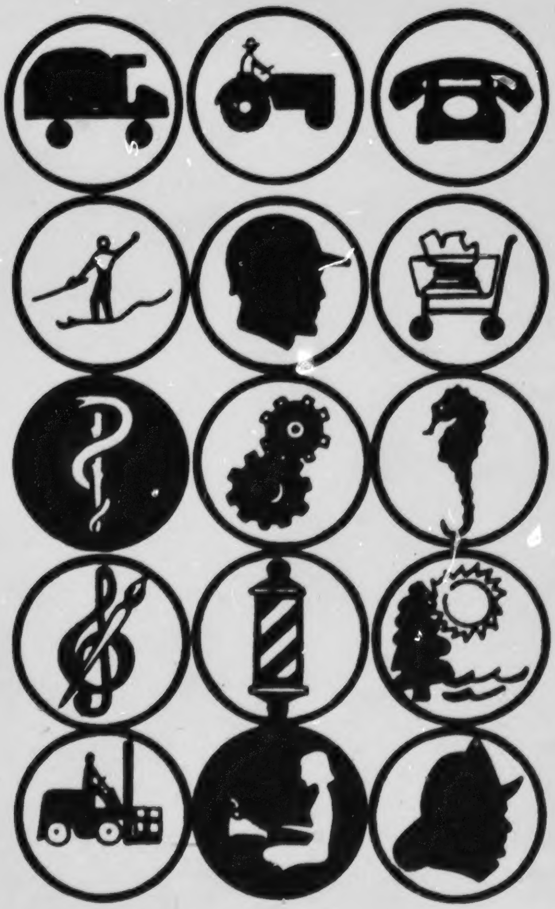
It is recommended that the above films be used in addition to the student surveys during the early part of the school year.

English

Students can investigate the classified section of the newspaper and determine the market for their various career interests.

Environmental Arts

The different career emblems representing the fifteen clusters can be created (in some appropriate modality) and used for a bulletin board display. Students will then be able to identify the clusters early in the school year. (See next page for specific emblems.)



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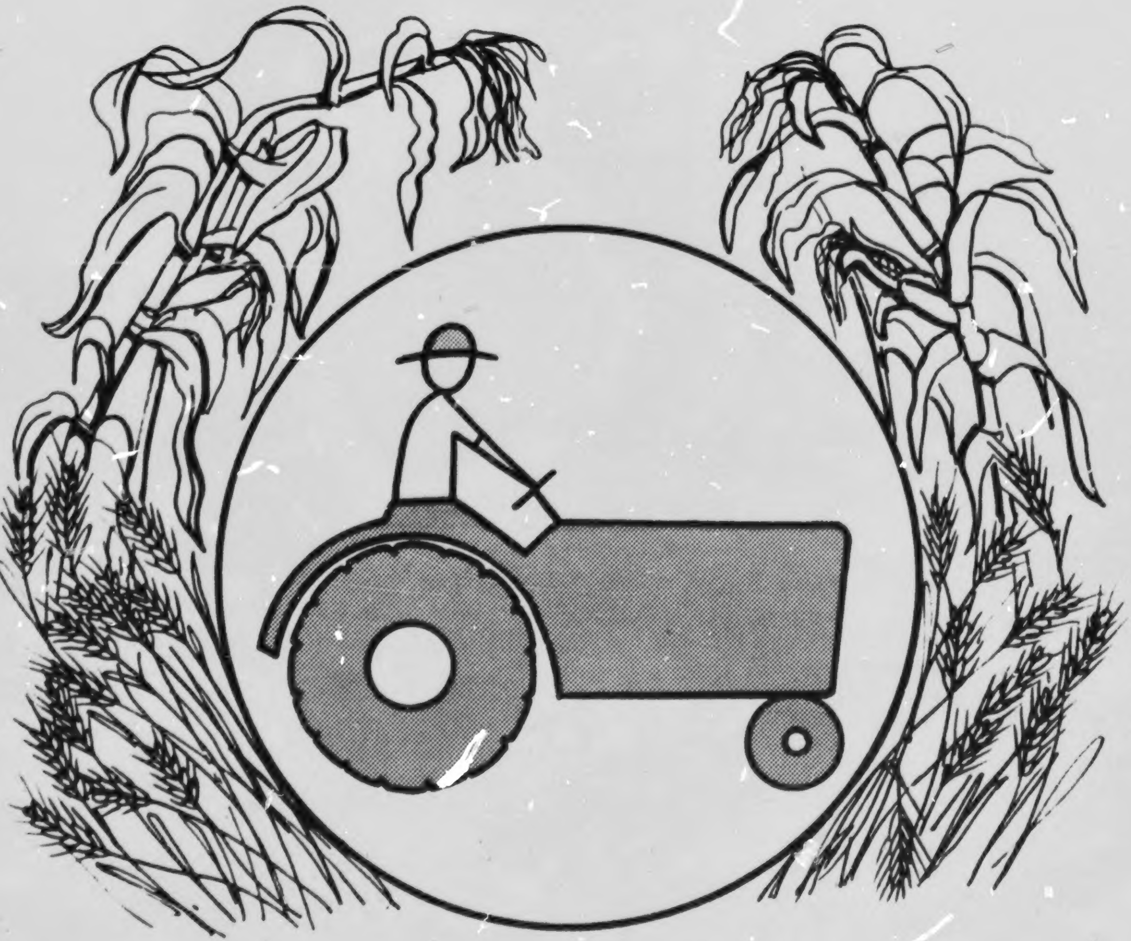


AGRI-BUSINESS AND NATURAL RESOURCES

Agri-Business and Natural Resources Cluster

In the agri-business and natural resources career cluster are occupations related to the following general areas: productive agriculture, forestry, land and water management, fishing and wildlife, mining and quarrying, petroleum and related products, surveillance, and research.

Agri-business careers offer a variety of opportunities in land appraisal, marketing, farming and ranching. The importance and scope of employment ranges from actual farm responsibilities and large agricultural industries to county and federal agricultural control agencies. Students should become familiar with the expanding fields of professional farm management, handling equipment, maintenance, and county extension services. Specific skills and training are essential for individuals that seek employment in this career area.

The conservation of the world's natural resources and maintenance of the balance of nature is a problem confronting all concerned citizens. Dedicated workers are needed in countless fields from land conservation and pollution control to wildlife preservation and park supervision. Some examples of rapidly growing vocational possibilities are in the areas of flood control, forest fire prevention, fish and game protection, mine development, reservoir management, and petroleum exploration.

The agri-business and natural resources career cluster is unique in that it permits the individual to select from a variety of physical environments. No other career cluster offers such a diversified field of geographic working conditions. As this unit is developed, students should become acquainted with this variety, as well as the talents, skills, and aptitudes one needs for a future in this important career area.

Procedure

The variety of careers in the agri-business and natural resources career cluster needs to be explained to the students. It would be a faculty decision as to who would consider the following list with the classes.

animal caretaker
auctioneer
agronomist
agricultural engineer
agriculture economist
agriculture statistician
beekeeper
biologist
breeder
biochemist
biophysicist
cooperative extension service worker
coal inspector
irrigator
landscape architect
livestock commissioner
livestock farmer
logger
lumberman
nurseryman
meat grader
mine supervisor
mineral inspector
miner
mining engineer
orchardist

cattle raiser
cattle dehorner
county agriculture agent
cotton sorter
dairy farmer
dairy technologist
entomologist
farmer
food and drug inspector
farm equipment mechanic
fumigator
forestry technician
forestry aide
feed store manager
forester
florist
floriculturist
farm hand
feed research aide
fruit grader
fire lookout worker
forest fire fighter
fish and wildlife specialist
fish culturist
fish and game warden
geologist
game farmer
geneticist
gamekeeper
greenhouse manager
egg producer
horticulturist
hatchery worker
herder
hunter
horse specialist
harvest contractor
olericulturist
park recreationist
plant ecologist
park ranger
pathologist
pest controller
plant materials technician
pomologist
park superintendent
park naturalist
poultry farmer
poultry technician
power plant operator
quarantine inspector
quarry worker
range conservationist
reservoir manager
soil analyst
seed grower
soil conservationist
sawmill operator
soil scientist
sheep farmer
stone grader
smoke jumper
surveyor
tree surgeon
trapper
transplanter
veterinarian
veterinary technician
vaccinator
weed inspector
wholesale supplier
woodland conservationist
wildlife specialist
zoologist

English

Numerous fiction and non-fiction books have been published within the scope of this career cluster and its numerous vocational opportunities. Students should be encouraged to read at least one such book and provide either a written or oral report.

Each student would be responsible for selecting one newspaper article involved with the agri-business and natural resources cluster. Besides summarizing and reacting to the content, major emphasis would be upon citing specific careers that could be related to the news release.

Environmental Arts – Home Economics

Utilizing an inexpensive 6 x 6 x 6 greenhouse, youngsters could plant assorted vegetables and diligently provide the fundamentals necessary for their growth. A subsequent home economics activity would be taking the crop and preparing certain dishes.

Charts could also be designed in the home economics classes displaying dairy products, grain products, and fruits and vegetables and their nutritional value.

Environmental Arts – Industrial Arts

Many modern day machines have helped the farmer in his daily work: e.g., the tractor, wheat harvestor, etc. The students in industrial arts classes could write to the various corporations manufacturing these devices and request diagrams of their design. These documents could become the nucleus of class discussions and perhaps utilized as a basis for scale models which could be fashioned from such materials as balsa wood.

Foreign Language

As part of a vocabulary lesson integrated into this cluster youngsters could act as produce and/or livestock auctioneers and accept bids for items from classmates. This entire activity would, of course, be spoken in the foreign language which the students are studying.

Health

Prevention of food spoilage is of major importance to all people. A unit in health class could involve the discussion and study of this topic. Major subject areas could be:

1. How do large producers and processors of food attempt to prevent contamination of their products?
2. If items do spoil, how can we tell before we eat them?
3. What diseases are carried by such food?
4. How can we prepare certain foods to insure our health?

Mathematics

Occupations in land appraisal, surveying and irrigation are important in the agri-business and natural resources cluster. The math classes can employ measurement principles and simulate the everyday work of the individuals in these job responsibilities. Right in the community, students could measure and estimate property size.

Problems involving perimeter and area formulas could be emphasized in regard to this cluster. Problems could also be developed along the following guidelines: Given the approximate distance that seedlings are planted from each other, students could be challenged by requiring them to calculate the number of these planted that would grow in a given area.

Science

As part of this cluster a unit of study can be developed with regard to seed germination of plants whose fruits and vegetables are consumed by man. The following areas could be emphasized in this study:

1. A complete list of such fruits and vegetables.
2. Where and why they are grown in the United States.
3. What protective measures are taken to insure their harvest and/or fruition.

During the time the agri-business and natural resources cluster is under consideration, a geology unit of study would be ideally scheduled. Certain career areas could initially be emphasized:

1. coal inspector
2. geologist
3. mine supervisor
4. miner
5. soil analyst
6. stone grader

Part of the unit could also include visual and chemical identification of different rock types along with a discussion of their geological origin.

Social Studies

A major problem in agri-business has been over-production of crops and livestock. Students could research this current dilemma and draw their own conclusions as to whether governmental farm support policies are effectively resolving this situation. They could consider both the problems of the farmer as well as the role of the Department of Agriculture.

In the last few years the search for oil has been intensified by the major producers. Each student could choose a different company and write for information regarding the search for petroleum. Specific attention should be upon whether the oil exploration is interfering with nature's delicate balance.

Materials

Career World Magazine
Curriculum Innovations
Highwood, Ill.

Popeye Career Magazine
King Features
New York, New York

Filmstrips

Careers in Agriculture
Careers in Conservation
Pathescope Educational Films
New Rochelle, New York

Films

U.S. Department of Agriculture
Soil Conservation Service
1380 Hamilton Street
Somerset, New Jersey 08873
(Films on agriculture and conservation)

American Gas Association
Public Relations Department
605 Third Avenue
New York, New York 10016
(Films on natural gas)

Ford Motor Company
Film Library
16 East 52nd Street
New York, New York 10022
(American farmers)

National Association of Manufacturers
277 Park Avenue
New York, New York 10017
(petroleum industry, farming, food and rubber production)

Association Films, Inc.
600 Madison Avenue
New York, New York 10022
(copper industry, land conservation)

Literature and/or Pamphlets

Royal Petroleum Corporation
Cliff Road
Sewaren, New Jersey 07077
(samples of fuel available)

American Forest Institute
1835 K Street, N.W.
Washington, D.C. 20006

American Forestry Association
919 17th Street, N.W.
Washington, D.C. 20006

American Petroleum Institute
Washington, D.C.

American Society of Landscape Architects
2013 Eye Street, N.W.
Washington, D.C. 20006

Rutgers University
Department of Botany
New Brunswick, New Jersey 08903

National Coal Association, Education Division
1130 17th Street, N.W.
Washington, D. C. 20036

National Landscape Association
832 Southern Building
Washington, D.C. 20005

U.S. Department of the Interior
Geological Survey
Office of Information
Washington, D.C. 20242

U.S. Department of Agriculture, Forest Service
Washington, D. C.

Trips and/or Speakers

Environmental Protection Agency, Edison Branch
Surveillance and Analysis Division
Water and Air
Edison, New Jersey
(Mr. Richard Dewling)
(Contact Mr. Royal Nadeau, marine biologist – 201-548-3347, ext. 575)

Mr. Peter Anderson, field research, ext. 555.

Local veterinarian

Local florist or nurseryman

Stepping Stone Environmental Education Center
RD 2 Box 270
Branchville, New Jersey 07826
Mr. D. Calderon, Director
201-948-3141

Great Swamp National Wildlife Reserve
Morris County, New Jersey

See Appendix for additional materials

Culminating Activities

1. From the list of agri-business and natural resources careers at the beginning of this unit, students should select a vocation and list career opportunities and requirements. Various local, state, and federal agencies will send this information upon written request.

2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.

3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

BUSINESS AND OFFICE

Business and Office Cluster

In America, small businesses and large corporations offer a variety of career opportunities. As a result of this career unit, students will become aware of the skill and initiative needed in decision-making, planning, organizing, directing, and controlling the operations of a variety of businesses.

Banking is a business with which the students may be somewhat familiar. However, they do not ordinarily witness such important employees as the statistician, the accountant, and the economist as they participate in the daily operation of any particular bank.

Financial and investment institutions are concerned with the operation of savings and loan associations, installment and personal finance companies, security, and holding companies. Insurance firms are concerned with the sale and preparation of insurance contracts. These include accident, health, casualty, fidelity, fire, liability, life, and theft.

Real estate areas involve the development, management, and rental of property in addition to the buying and selling of buildings and land.

In all of these categories, many important responsibilities are delegated to secretaries, typists, bookkeepers, receptionists, etc. These employees should not be overlooked, for without their major contribution the business world would most certainly cease to function.

The business and office career cluster is one that provides various future employment opportunites for those young people who display aptitude, interest, and training in this career area.

Procedure

The variety of vocations involved in business and office careers needs to be explained to the students. Since business and office careers are involved in every facet of education, the faculty would decide as to who could consider the following list with the students:

account analyst
accounting clerk payroll
adding machine operator
advice clerk
actuary
auditor
bank cashier
bank president
bond analyst
bookkeeper
bond trader
budget accountant

junior executive
keypunch operator
job analyst
legal secretary
loan counselor
management instructor
manager
mathematician
messenger
mortgage advisor
office clerk
personnel recruiter

calculating machine operator
certified public accountant
checking clerk
Christmas Club bookkeeper
classifier
clearing house clerk
coin counter
coin separator
coin wrapper
cost accountant
cashier
commodity loan clerk
computer programmer
court reporter
credit analyst
credit manager
duplicating machine operator
file clerk
foreign exchange trader
insurance accountant
insurance claims adjuster
insurance clerk
interviewer
public relations officer
recruiter
real estate broker
receptionist
records clerk
reserve officer
safe deposit box bookkeeper
salesperson
savings bond clerk
secretary
securities clerk
securities trader
shipping clerk
statistician
stenographer
systems analyst
tax accountant
tax clerk
teller
timekeeper
transcriber
typist
vault attendant

English

In large corporate offices, specialists are employed to proofread and correct all business correspondence. These personnel have various titles – grammarian, proofreader, personal secretary, etc. A realistic English unit could involve activities such as correction of letters and other similar types of correspondence: telegrams and night letters. Emphasis in this unit should be placed on the importance of this person's responsibility in terms of a company's public and business image. Subsequent lessons could relate to the specific study of business letter form, structure and technique.

Environmental – Fine Arts

In many courtrooms photographers are barred and as a result a new employment area has been created. The court sketch artist's skill is now in great demand by the mass media. As part of this cluster, students could go to the local municipal courts and try their skill at drawing the court proceedings. A visit to the county courthouse would serve the same purpose.

Environmental Arts – Industrial Arts

As a two-step activity students could design and construct a model home of their own choosing. Then simulating the role of a real estate broker, the home could be the object of sale to a prospective student-customer. Valuable insights can be gained into the advantages various homes have on the market.

Extracurricular

The HEP (Hillview Enrichment Program) store will operate as a small business on a daily basis. This will give students "hands-on" experience in the world of business, sales, and office procedures.

Foreign Language

Students could examine the various monetary systems and rates of exchange that exist in the culture they study. The international finance operations of large banks have this information available upon request.

Health

Many office personnel are hired for their personality and appearance as well as their professional skills and aptitude. For example, receptionists, tellers, secretaries, and public relations officers need to project good images as they come into contact with the public. Health classes could concern themselves with this aspect of the business and office career cluster. Role playing projects giving the students the responsibility of interviewing and applying for positions could be planned.

Mathematics

As part of this unit, the math teachers could introduce word problems involving bank interest on savings accounts as well as loans. It might also be appropriate to examine credit cards and advantages and disadvantages of time payments.

Science

Much of the mathematics involved in this cluster has been computerized. An interesting science unit could be exploring the history of computers and how they mechanically function. A possible field trip could then be planned for the students. IBM Corporation arranges programs in this regard.

Social Studies

As part of the social studies class, a general discussion and explanation can be undertaken with specific emphasis upon our capital system and its operation. Within the scope of this activity each student could be assigned a project of reporting on a major corporation currently doing business in the United States. In this regard youngsters would be required to write letters requesting necessary information as to the size of the company, its products, profits, etc.

Social Studies/Mathematics

In social studies and math classes, one dollar could be supplied per pupil and a group decision then made as to the corporation and number of shares of stock to be purchased. As a consequence of this activity, a study of the stock market could be initiated, not solely in terms of its operation but also in terms of the types of personnel that are employed.

The following small business cycle is applicable to both the Business and Office as well as the Marketing and Distribution clusters.

The following list includes a variety of small business opportunities from "Career Development: The Involved Commitment" – New Jersey Department of Education, Division of Vocational Education, where there are a number of occupational possibilities: sales, secretarial, bookkeeping, supervisory, as well as personal ownership, etc.

service station
babysitting service
restaurant ownership
hardware store
car wash
camera shop
flower shop
music store
employment agency
handicrafts business
variety store
plumbing contractor
electrical shop
printing shop
furniture retailer
upholsterer
window display business
window shade business
gift shop
beautician shop
merchandise wholesaler
photographer
real estate business
paperhanger
roofing business
coin and stamp shop
carpet shampooers
tailor
professional housekeeper
delivery service
private caterer
driving range (golf)
house mover
piano tuner
bakery shop
carpenter
television repair shop
sign painter
bookkeeping service
motel ownership
automatic vending service
dry cleaning store
shoe repair shop
book store
pet shop
jewelry store
drive-in restaurant
nursery business
mobile homes
heating contractor
air conditioning repair work
woodworking shop
boys' and men's apparel shop
soft-frozen dessert stand
girls' and women's apparel shop
hobby shop
barber shop
interior decorating
painter of portraits and pictures
painter – interior/exterior
wallpaper shop
lawn service maintenance
exterminator
bicycle shop
telephone answering service
domestic worker
pilot
butcher shop
glazier
tree surgeon
musician
cabinetmaker
asphalt and paving service
private sanitation service
private janitorial service

(From State Department of Education, *Introduction to Vocations*)

Mathematics

The following activity serves as a sample bookkeeping assignment which could be completed in the mathematics classes. Although this is a simplified version, such material can be developed in a more comprehensive fashion as the individual teacher finds it necessary.

SAMPLE

Math Class – School or Homework Activity: Bookkeeping

You are the sole proprietor of a small grocery store on Elm Street. This past month your business took in $2,200 in total receipts. From this money all bills are to be paid. Here are the bills.

1. Greenview Dairy Supplies	$ 183.46
2. Fred's Wholesale Meat Market	450.00
3. Royal Canned Goods Wholesaler	292.51
4. Mr. Albert Jones (owner of the building that you are renting) Monthly rental charge	250.00
5. Bell Telephone Company	20.05
6. Public Service Electric and Gas	67.40
7. Waterford Insurance Company (building and employee insurance)	61.25

Deduct 10 cents for each check that is written. Determine how much net profit was remaining after all the bills were paid.

YOUR CHECKBOOK

3rd National Bank
of New Providence

No: 1
Date: ____________ 19____

Pay to the Order of ______________________________ $______

______________________________ Dollars

Memo: ______________ Signature: ______________

012345

3rd National Bank
of New Providence

No: 2
Date: ____________ 19____

Pay to the Order of ______________________________ $______

______________________________ Dollars

Memo: ______________ Signature: ______________

012345

3rd National Bank
of New Providence

No: 3
Date: ____________ 19____

Pay to the Order of ______________________________ $______

______________________________ Dollars

Memo: ______________ Signature: ______________

012345

3rd National Bank
of New Providence

No: 4
Date: ____________ 19____

Pay to the Order of ______________________________ $______

______________________________ Dollars

Memo: ______________ Signature: ______________

012345

BALANCE SHEET

DEPOSITS	YOUR RECORDS	CHECK AMOUNT
$2,200.00	No: 1 Date ____________ 19_____	$2,200.00
	Pay To______________________________	$__________
	Memo Total	
	No: 2 Date ____________ 19_____	
	Pay To______________________________	$__________
	Memo Total	
	No: 3 Date ____________ 19_____	
	Pay To______________________________	$__________
	Memo Total	
	No: 4 Date ____________ 19_____	
	Pay To______________________________	$__________
	Memo Total	
	No: 5 Date ____________ 19_____	
	Pay To______________________________	$__________
	Memo Total	
	No: 6 Date ____________ 19_____	
	Pay To______________________________	$__________
	Memo Total	
	No: 7 Date ____________ 19_____	
	Pay To______________________________	$__________
	Memo Total	

Did you deduct 10 cents for each check? What was your total gross for the month? What is your net profit?

The following activity could be developed in either the social studies or English classes. It is designed to make the student aware of certain variables involved in the location and establishment of a business.

The Small Businessman and His Location

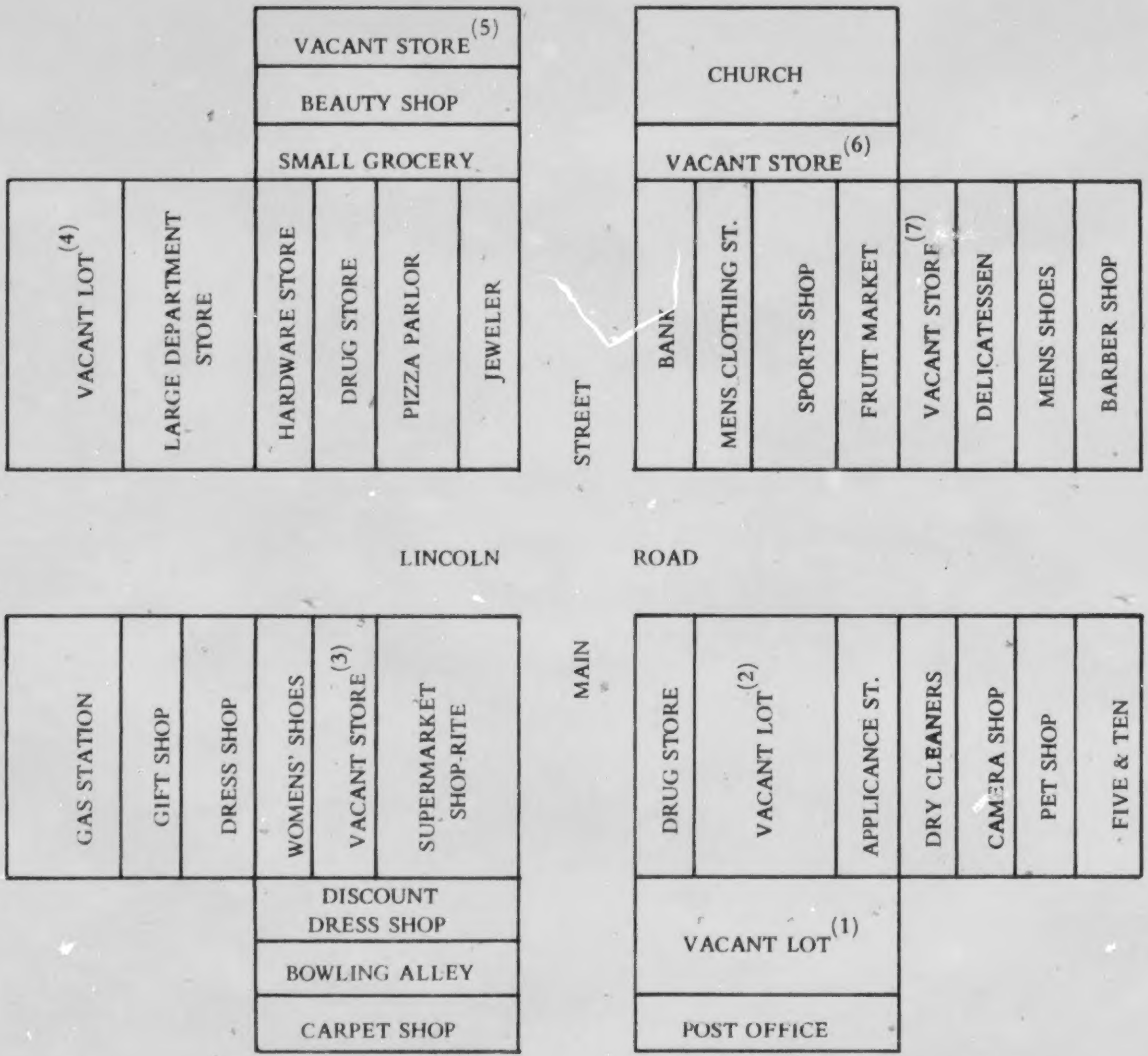
The small businessman who is in retail sales should limit the selection of his location to an area that is suitable to the nature of his particular business. Here is a list of important items to consider in choosing a proper location:

- Is the store location attractive and accessible to customers?
- Are there adequate parking facilities?
- Is the store located in an area where you will attract the type of clientele that you are seeking? (Examples: Would you put an exclusive dress shop in the poorest section of town? The answer is no. An exclusive restaurant should be placed in the middle class to upper-middle class section of the community.)
- Is there competition for your product or service located nearby? If so, does this bother you?
- How much are taxes and rent for your shop? How long is the lease? Is it renewable?
- Is there room for possible expansion in this store?
- Are the people pleasant and friendly in this neighborhood?
- Do you feel that this location will help make a success of your business?

IN-CLASS LOCATION PROBLEM

This morning we visited a number of small businesses. We learned that many factors contribute to the success or failure of these businesses. A good *location* is just such a factor. In the diagram below, make decisions regarding small businesses by answering the questions accompanying this diagram.

Good Luck!!


VACANT STORE (5)
BEAUTY SHOP
SMALL GROCERY
VACANT LOT (4)
LARGE DEPARTMENT STORE
HARDWARE STORE
DRUG STORE
PIZZA PARLOR
JEWELER
CHURCH
VACANT STORE (6)
BANK
MENS CLOTHING ST.
SPORTS SHOP
FRUIT MARKET
VACANT STORE (7)
DELICATESSEN
MENS SHOES
BARBER SHOP
MAIN STREET
LINCOLN ROAD
GAS STATION
GIFT SHOP
DRESS SHOP
WOMENS' SHOES
VACANT STORE (3)
SUPERMARKET SHOP-RITE
DISCOUNT DRESS SHOP
BOWLING ALLEY
CARPET SHOP
DRUG STORE
VACANT LOT (2)
APPLICANCE ST.
DRY CLEANERS
CAMERA SHOP
PET SHOP
FIVE & TEN
VACANT LOT (1)
POST OFFICE

There are four vacant stores and three vacant double lots in this diagram. Larger businesses would undoubtably need the larger lots.

1. If you wanted to open a liquor store, would this community have a need of your goods and services?
2. Would you build your tavern in vacant store 5 or 6? Why? Why not?
3. Could this community use another gas station? If not, why? If so, where would you put it and why?
4. You always wanted to have your own women's dress shop. Now that you have the money, you decide to do so. Where do you think the best vacant store location will be? Why?
5. Where would you place a movie theater in this community?
6. Can you suggest good locations for the fire and police departments? Give reasons for your answers.
7. Would an ice cream store do better in vacant stores 5, 6, or 7? Why?
8. Which vacant stores and vacant lots would be the most expensive to rent? Explain your answers.

Answers for the Teacher

1. Yes, there are no other liquor stores.
2. No, the reason being that the tavern would be too close to the church.
3. Yes, the gasoline station could be effective at any of the three locations. At vacant lot two, it would be in the heart of the business sector. In vacant lot one it would be the only station on Main Street and next to the post office. In vacant lot four it would be opposite its competition and this would make this location the least favorable. However, it must be remembered that this is a corner location and less accessible to heavy traffic than locations two and three.
4. The best location for a women's dress shop would be vacant store five or seven. Vacant store three is ruled out due to the heavy competition from the surrounding shops.
5. Any of the vacant lots would make a fine movie theater. Lot two is right in the center of town. Lot one is next to the post office, and vacant lot four has a corner location.
6. Vacant lot two is the ideal location for the police department. It is in the center of town and opposite the bank. The fire department would best be served by vacant lot four. This lot is on a corner and would allow the fire department the quick getaway that they need in emergencies.

7. An ice cream parlor would do best in vacant store seven. More people would pass this location as it is on the main thoroughfare.

8. Vacant stores two and three would be the most expensive stores to rent due to the fact that they are centrally situated. Vacant lot two would probably be the most expensive lot, again due to its central location.

(from State Department of Education, *Introduction to Vocations)*

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Ill.

Popeye Magazine
King Features, New York

Free pamphlets available

Small Business Administration
970 Broad Street, Newark, New Jersey

Carol Hausen, c/o Consumer Education Center
Johnson Wax, Racine, Wisconsin 53403

Games available on loan
Occupational Resource Center, Edison, New Jersey

Introduction to Business Practice
Life Careers
Venture

These are simulations that involve practices used in the world of business:

Residential Manpower Center, Building 871
Kilmer Campus, Edison, New Jersey

Filmstrips

Business Administration
Careers in Business Office Skills
Careers in Banking and Insurance
Pathescope Educational Films, New Rochelle, New York

Films

The Business Office – Making Things Happen, $5.25 rental
Bookkeeping: Occupations and Opportunities, $6.10 rental
University of Illinois, Visual Aids Service
1325 South Oak Street, Champaign, Illinois 61820

Careers in a Large Industry, Houghton-Mifflin
Pennington-Hopewell Road, Hopewell, New Jersey 609-466-1950

Speakers and/or Trips

Kemper Insurance, Summit, New Jersey
Mrs. Elefante – Tour of small groups
273-9000

Allstate Insurance, Murray Hill, New Jersey
Tour arranged by Joseph Grosso, New Providence High School

Joseph Kerns, Bell Laboratories, Murray Hill, New Jersey
Business lawyer and computer specialist

Mr. Hawley, Oakwood Drive, Murray Hill, New Jersey
Discussion on computer operations

Joseph Grosso, Business Education, New Providence High School

Summit Area Chamber of Commerce
57 Union Place, Summit, New Jersey
277-6800

Mr. John Stenger, International commodity trader
18 Hickory Place, New Providence, New Jersey
464-9236

Mr. Jan vanDam, import-export business
55 Knollwood Drive, New Providence, New Jersey
464-1469

Literature and Pamphlets

Bureau of Education and Research
American Advertising Federation
655 Madison Avenue, New York, New York 10021

American Association of Advertising
200 Park Avenue
New York, New York

American Statistical Association
Room 640, 806 Fifteenth Street, N.W.
Washington, D.C. 20005

Cosmair, L'oreal Division
222 Terminal Avenue
Clark, New Jersey 07066
(c/o Stan Rolnick, 149 Madison Avenue, New York, N.Y.)

Council on Opportunities in Selling, Inc.
630 Third Avenue
New York, New York 10017

Public Relations
General Motors
Detroit, Michigan 48202

See Appendix for additional materials.

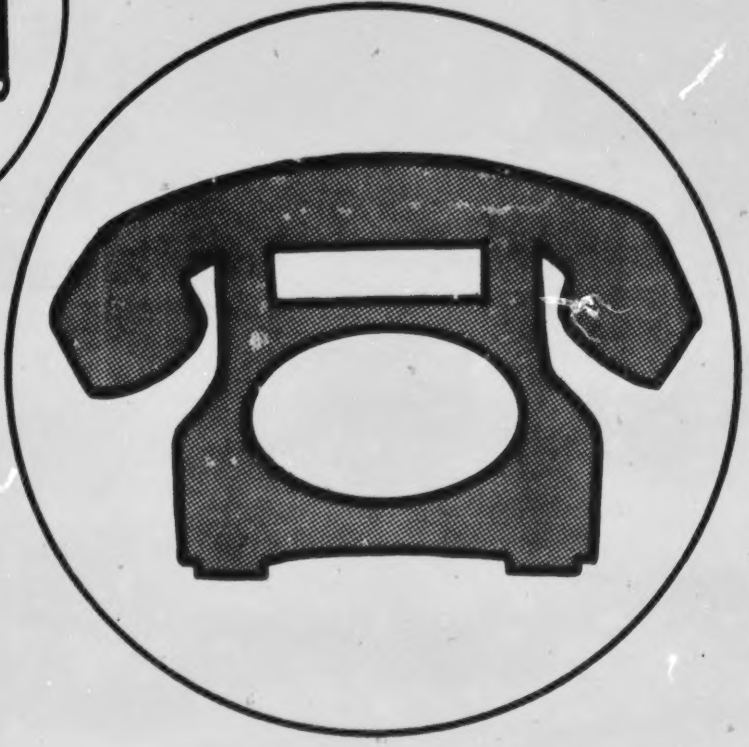
Culminating Activities

1. From the list of small businesses provided at the beginning of this unit, students should select two topics and be able to list career opportunities under each heading.

2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.

3. Within the classroom setting it is hoped that teachers can channel assignments to complement this career theme.

COMMUNICATIONS AND MEDIA



Communications and Media Cluster

Communications and media industries offer a vast reservoir of vocational areas. Books, newspapers, radio, telephones, recordings, television, and motion pictures are the major vehicles of communication. The occupational potential is endless. More than 700,000 employees are required to provide telephone service throughout the world. Construction service and maintenance activities are involved. The television industry has produced a host of new and interesting occupations since its inception. Technicians, camera operators, engineers, designers, and supervisors are just a few of the people involved in this important industry.

In the New Providence community visits can be arranged to Bell Laboratories in Murray Hill, the local newspaper, and the county radio station. Personnel from these businesses are quite talented in dealing with middle school students.

Procedure

Occupations in the communications industry should be explained to the students. It is possible that this could be a class discussion as part of the English and language arts or environmental arts curriculum.

Communications and Media Occupations

actor
airport flight controller
announcer
arranger
art director
audio engineer
broadcast technician
cartoonist
cable splicer
camera technician
commercial artist
composing machine operator
columnist
critic
commercial engineer
copyright expert
cast director
chief electrician
dispatcher
director
disc jockey
disc-recording machine operator
editor
film editor
librarian
lineman
lyricist
music director
newspaper carrier
news analyst
page
prop specialist
proof reader
photographer
printing press operator
producer
publisher
programmer
renderer
radio operator
rewriter
reporter
screen reporter
script reporter
set designer
stage assistant
sound effects technician
spiral binder

film camera operator
film processor
foreign correspondent
foreign news translator
gag writer
ground controller
layout artist
linotype operator
light technician
tape recorder operator
telephone operator
teletypist
telegrapher
translator
typesetter
video camera engineer
wardrobe specialist

(Reference: *Career Development* guidebook, State of New Jersey)

English

Utilization of literature texts for appropriate plays which can be performed within the class setting and perhaps as school assemblies. In this regard, teachers should place special emphasis upon the recognition of different communications careers involved in these activities.

Environmental Arts – Fine Arts

The arts class could further develop existing lessons in the different aspects of still photography and motion picture film. It would be hoped that significant emphasis would be placed upon careers involved in these areas.

Environmental Arts – Home Economics

Students can explore various uses of advertising in the media for sales promotion of certain food products; e.g., Kraft, MacDonald's, and Burger King. Discussion and reports should emphasize why these commercials do succeed in increasing sales volume.

Environmental Arts – Industrial Arts

Students can set up a small scale realistic assembly line for the production of model radio kits.

Extracurricular

The preparation of the school yearbook can provide another "hands-on" vehicle by which students can become aware of various facets of the communication industry and its concomitant careers.

The HEP (Hillview Enrichment Project) will provide those students with writing and illustrative abilities the opportunity to be exposed to the advertising field. This school store will give students actual experience and training.

Foreign Language

In foreign language classes, students could be assigned the project of taping a five-minute radio news- network program and then translating this information into Spanish or French. A subsequent and/or culminating activity could be the live student retaping of this same program in the foreign language.

Mathematics

Installation of equipment in the telephone industry is a task which involves a variety of activities all of which are priced at different rates. An ideal math project could be to contact the local telephone business office and ask for scheduled cost of installation of telephones, extensions, etc. With this information at one's disposal, the math teacher could devise word problems involving this subject matter.

Music

The annual school operetta can also provide exposure to various careers in the communications field – lighting, editing, production, sound.

Physical Education

Discuss and use the video tape machine as a means of analyzing and improving individual and team skills and overall performance.

Science

In science class, an integrated activity would involve the examination and discussion of the scientific aspects of television and radio operation.

Science classes could undertake a study of the mechanics of radio as well as television transmission. Black and white and color systems could be examined. Emphasis would also involve the technical skills needed by the personnel involved in this important media. Report writing and/or discussion of inventors could be part of the project; e.g., Marconi, DeForest, A.B. Dumont, etc.

Social Studies

In conjunction with the present social studies curriculum and its consideration of industrialization in the modern age, a history of the communications industry can be undertaken.

Example of a Teacher-Innovated Communication Career Cycle in Journalism

Introduction: Hillview's eighth grade class visited the Star Ledger Building in Newark, New Jersey. In preparation for the trip, the eighth grade English class spent two class periods learning about the many fields available in the newspaper business. They also explored various tasks which encompass these careers.

First Day:

Motivation: Ditto sheet #1 entitled "Career Awareness: Journalism."

Discussion of proverb: "The pen is mightier than the sword.."

Activities: Filmstrip on *Journalism*, Part 1 (Pathescope Films).

Essence of the filmstrip: This is the kind of work you would be doing. This is how you do it. This is where you would work. These are the people with whom you would be working. Is this career area for you? Specific jobs are displayed along with the individuals who work at the jobs.

Follow-up: From ditto sheet #1 the students select three out of fifteen possible jobs which they might enjoy pursuing. On paper they discuss why they feel they might enjoy this area.

Second Day:

Motivation: Ditto sheet #2 labeled "In Search of a Career in Journalism." A discussion follows the reading of this sheet to determine the qualifications necessary to work in this field.

Activities: Filmstrip, Part 2. Individuals working in various fields of journalism discuss their jobs, educations, and recommendations to interested applicants. Following the film the students orally discuss the questions which appear on the bottom of sheet #2.

Follow-up: Reporter's assignment: Imagine that you have just been hired as a reporter on the staff of the *Star Ledger*. After being called into the editor's office, you discover that your first assignment is to cover the kidnapping of an official in New Providence. What would you do?

Ditto Sheet #1

editors
reporters
typists
layout
design
typographer
photographer
cartoonists
copy editors
advertising
printers
press operators
engravers
lithographers
secretaries

Areas: newspaper, radio, televison, news service organization.

Graphic communication today is the lifeblood of our economic, political, and cultural existence. In every waking hour we act, react, and are influenced by the reactions of others as the result of some form of the printed word.

We play watchdog to our government via the printed newspaper.

We pay our printed bills with printed money or printed checks.

We buy goods learned about through printed advertising and we take these goods home in printed cartons.

Our days are brightened by printed magazines or printed books.

The great works of art, past and present, are brought from far-off museums to our doorsteps by accurate reproductions.

However, today's public must be selective in what it reads. There is such an abundance of materials available that we couldn't possibly read everything. Therefore it has become an important job of the writers to catch the reader's attention. People in the newspaper or journalism field must be highly trained in order to be successful at their jobs.

Ditto Sheet #2

In Search of a Career in Journalism

A person seeking a career in journalism should have the following aptitudes and talents: good command of the English language, the ability to write well and write quickly, interest in public affairs and current events, interest in people and things about them, ability to be a good observer, a good voice, and neat appearance for radio/tv.

Educational Requirements: College degree, particularly from a school of journalism. This is not absolutely essential if the ability to write is there and the student can really demonstrate enthusiasm for the profession. Smaller papers and radio/tv outlets will consider noncollege people if previous interest has been shown such as working for the school paper, or record of summer employment in the field is demonstrated.

These questions should help you understand yourself in regard to careers in journalism:

1. What subjects should students considering journalism be doing well in?
2. What extra-class and extra-school activities would indicate an interest in journalism?
3. What are the advantages and disadvantages of this occupation?
4. What impact on one's daily life might journalism have?
5. What is the employment outlook for journalism? Where can this sort of information be obtained for the local job market?
6. What are the usual fringe benefits in journalism?

Materials

Career World Magazine (monthly delivery)
Curriculum Innovations, Highwood, Illinois

Popeye Series – Career Awareness Program
King Features, New York, New York
Call collect 212 – 682-5600, ext. 321.

Filmstrips

Journalism
Show Business
Pathescope Educational Films, New Rochelle, New York

Films

Careers in Filmmaking, Parts I and II
Careers in Television: Producing Advertising Commercials
Educational Dimensions Corporation – $8.50 rental

Careers in Broadcast News
Visual Aids Service, University of Illinois
1325 South Oak Street, Champaign, Illinois 61820

Speakers and/or Trips

Bell Laboratories, Murray Hill, New Jersey

Star Ledger News, Newark, New Jersey
Mr. Bloch, 877-4031 – Tours Tuesday and Wednesday at 10:30 a.m.

Courier News, Route 22, Greenbrook, New Jersey

National Broadcasting Company, 30 Rockefeller Plaza, New York

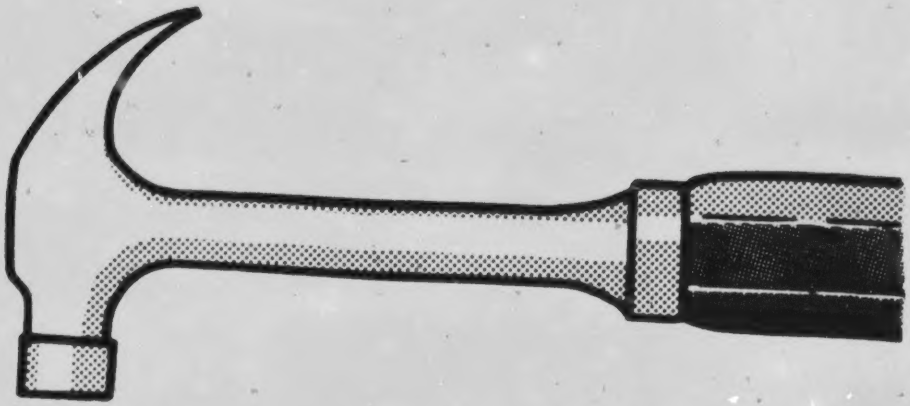
New Jersey Bell Telephone – Mrs. Fedorzyk/Miss Biller 381-9900, ext. 311, for speaker and film, slides, etc. e.g. "All in a Day's Work," "Telephone Operator"
Speaker: Mrs. Becerra, district recruiter – 289-9962.

If available: General manager, WKMB Radio Station
News reporter, local and/or statewide newspaper
Professional writer, New Providence resident
Professional performer, New Providence resident

See Appendix for a more complete list of materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the communications and media cluster and list the educational as well as personal requirements. This activity could be integrated within the social studies or the English disciplines.
2. It is hoped that students with greater interests and natural talent in specific communications careers would consult the career development team for further information and guidance.
3. Within the classroom setting, it is hoped that teachers can further channel assignments to complement this career theme; e.g., oral/written reports, discussions, debates, extra-credit projects.



CONSTRUCTION

Construction Cluster

Man is continually seeking ways to improve his ability to build houses and larger structures. Today the construction industry involves the planning and building of homes, factories, hospitals, schools, bridges, dams, roads, etc.

The planning of a structure usually begins with the work of the architects, engineers, and contractors. Leveling and distributing the land involves many important individuals. The layout, assembling, and installation of the plumbing and electrical fixtures are vital roles performed by skilled and unskilled workers.

As a corollary to the study of the construction industry, students can become familiar with the organization and function of the trade unions. The bargaining over wages, hours, health benefits, and pensions can provide interesting class discussions.

The ability and experience required for advancement from apprentice to journeyman to master in the skill trades should be explained to students with interests in this vocational area.

This career area not only makes a significant contribution to the national wealth and development, but its workers are for the most part in well-paid occupations.

Procedure

The variety of occupations involved in the construction industry needs to be explained to the students. It would be a faculty decision as to who would discuss these careers in the following list:

arc welder
architect
air conditioning installer
asbestos worker
bricklayer's tender
building craftsman
building contractor
building inspector
building laborer
building wrecking supervisor
bulldozer operator
carpenter
cement mason
chimney repair technician
civil engineer
contractor
crane operator
electrical engineer
electrician
landscape contractor
lineman
marble setter
painter
paperhanger
pipe fitter
plasterer
plumber
porter
power shovel operator
refrigeration worker
rigger and machine mover
riveter
rodman
sanitary engineer
safety engineer
sheetrock worker
steelworker
stonemason

engineer
fitter
floor covering installer
glazier
heavy equipment operator
hoister
ironworker
janitor
laborer
structural iron worker
structural metal worker
supervisor
surveyor
technical engineer
telephone installer
tile setter
welder

English

The project reports can be correlated to the English program as these assignments could be graded by this department in terms of grammar, usage, style, etc. Likewise oral reports could be graded by the English teachers with specific emphasis placed on presentation as well as content.

Environmental Arts – Fine Arts

In art class students can experiment with miniaturized blueprint construction of homes or large structures. Students experience a sense of creative accomplishment when they see their blueprint in a three-dimensional model. This activity gives the students "hands-on" experience in mechanical drawing and industrial arts, both vital areas of the construction cluster.

Environmental Arts – Industrial Arts

A slide presentation from Mechanical Contractors Association of New Jersey, called "Careers in Mechanical Contracting," will be available. It can be used in any of the disciplines as an introduction.

Foreign Language

During the construction cluster unit, foreign language classes could learn the vocabulary used by architects, contractors, and builders. Visual charts displaying the translations might be created.

Health/Science

In health and/or science class, discussions can be initiated concerning important safety measures that are taken in the construction industry; e.g., safety glasses used by the welders.

Mathematics

In math class a study can be made of the various geometric shapes that are essential to the proper construction of modern buildings, etc. Concurrently, an applicable study of area formulas can be undertaken with relation to the construction industry; e.g. :

1. Students could be assigned the project of measuring the dimensions of Hillview School in terms of each classroom and/or the totality of the entire structure.

2. The same kind of activity could be assigned as a homework project with regard to the measurements of the youngsters' rooms and houses.

In considering the math concepts of ratio and proportion, planning locations and cost analysis word problems and projects can be developed. A study of heating capacity (BTU formula) can be implemented.

Measurement and capacity are important understandings for many vocations in the construction cluster. Projects simulating the work of carpenter's measurement and estimation can be developed; e.g., formula bd.ft. = lwt.

Physical Education

A demonstration and discussion of the effects of physical labor upon muscular development could be arranged during the construction cluster.

Science

In conjunction with a science unit study of geology, the responsibilities of surveyors, landscapers, architects, and engineers can be explored. The scientific skills involved with heat energy and electricity can be included with this career cluster. The National Association of Manufacturers supplies films useful for consideration for this cluster in the science classroom. (See additional materials list.)

Social Studies

Changing architectural styles in Europe and America throughout history can be included in the social studies and foreign language curriculum; e.g., the difference in Romanesque and Gothic styles.

In social studies a unit could be developed in regard to the rise of organized labor in the United States. Correlated with this activity would be an examination of such subjects as the minimum wage, strikes, etc.

Students could be given individual project reports on important personalities in the labor movement; e.g., John L. Lewis, Walter Reuther, etc. In a similar manner students could report on various important labor laws like Taft-Hartley.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Vocational Magazine, King Features, New York, New York

Filmstrip

Careers in Construction
Pathescope Educational Films, New Rochelle, New York

Films

Anatomy of a City
Mechanical Contractors Association of New Jersey
134 Evergreen Place, 9th Floor, East Orange, New Jersey 07018

To Build a Future
John Schuler, Contractors Association of New Jersey
500 Morris Avenue, Springfield, New Jersey 07081

Architectural Careers
Visual Aids Service, University of Illinois
1325 South Oak Street, Champaign, Ill. 61820, rental $6.30.

National Association of Manufacturers
277 Park Avenue, New York, New York 10017
Series of 13-minute 16mm films:
- Electrical Power No. 379
- Sinews of Steel No. 395
- Design for Working No. 408
- The Mighty Electron No. 466

Slide Presentation

Careers in Mechanical Contracting
Mechanical Contractors Association of New Jersey
134 Evergreen Place, 9th Floor, East Orange, New Jersey

Speakers and/or Trips

New Jersey Society of Architects
For speaker call: President, North Suburban Chapter
Mr. Edward McMullen, P.O. Box 543, Denville, New Jersey

Mechanical Contractors Association of New Jersey
134 Evergreen Place, 9th Floor, East Orange, New Jersey

Possibilities

Local builder to speak to small group of students.

Representatives of various craft unions to meet with youngsters for appropriate presentations.

Mr. Jamie Martens (Speaker, New Jersey Socity of Architects)
Architect, Berkeley Heights, New Jersey

See Appendix for list of additional materials

Culminating Activities

1. From the list of construction careers provided at the beginning of this unit, students should select a career opportunity and list the skill and education necessary.
2. Students with specific interests in the construction cluster can contact the career development team for further information and guidance.

CONSUMER AND HOMEMAKING

Consumer and Homemaking Cluster

The consumer and homemaking cluster involves jobs dealing with food, clothing, textiles, home furnishing, and families. In this category are a large number of opportunities. Realistically, this cluster does parallel many of the careers developed in other units. However, in this instance specific emphasis will be upon developing an occupational understanding of jobs as they would relate to this cluster.

In this regard concentration will be upon employment areas that have not been developed in previous units. It is hoped that, as the unit is initiated in the classroom, the faculty will correlate this material with relevant subject matter in other units.

Procedure

The variety of occupations in the consumer and homemaking cluster needs to be explained to the students. The arts department would be the best qualified to discuss the following list with the students:

administrative dietician
appliance repair technician
beautician
biochemist
bridal consultant
budget consultant
buyer
chemist
clothier
color specialist
consumer analyst
cook
custodian
designer
dietician
door-to-door salesperson
draper
dry cleaner
dyer
exporter
fabric designer
fabric specialist
family relations consultant
fashion coordinator
fashion designer
fashion journalist
fast food service
finisher
food and drug administrator
food technologist
furniture polisher
hostess
hotel manager
housekeeper
household technician
importer
interior decorator
janitor
kitchen helper
knit worker
launderer
lighting advisor
maitre d'hote
market research assistant
merchandiser
model
nutritionist
pattern designer
pattern grader
print designer
restaurant owner
retailer
salesperson
sewing instructor
sewing machine operator
shoemaker
showroom demonstrator
sizer
stylist
supermarket personnel
tailor/seamstress
textile chemist

garment manufacturer
home economist
home delivery service
home manager
homemaker
upholsterer
valet
waiter
waiters' assistant
weaver

English

In conjunction with classes in business letter writing, students can write to various fast-food service corporations (MacDonald's, Dunkin Donuts) and inquire as to their history of development and franchise requirements.

Environmental Arts – Fine Arts:

Interior decorators, seamstresses, showroom demonstrators, fashion designers, and tailors provide important services. Art classes can gain exposure to these careers with "hands-on" lessons and study of pattern design, fashion creation, and textiles. Contests can be arranged and school displays created for the students' work.

Environmental Arts – Home Economics

Throughout the year the environmental arts department is concerned with the consumer and homemaking skills. It is hoped that they will emphasize the various careers that are involved in these areas.

A bulletin board could be maintained that would deal with the more specific consumer-related careers. This could be a continuing project performed by the arts classes.

Extracurricular

Mr. Saul Schur, Director of Educational Forums for Good Housekeeping Institute, has expressed a strong interest in this career cluster. He will be in contact with the career development team in the fall. At this time arrangements will be made to meet with him at his New York office and, hopefully, Hillview School will be able to participate in his pilot school program dealing with consumer careers. This involvement is contingent upon approval by the administration and its relevance to the program currently being developed in New Providence.

Foreign Language

Students can create cookbooks including various foods foreign to New Providence. Classes have been responsible for preparing French or Spanish dinners in class. Discussions can involve the popularity of foreign food restaurants in America.

In the foreign language classes, clothing patterns which are written in Spanish and French could be utilized as a lesson or test of the students' skill in translating directions. Concurrently, mention could be made of the various types of job skills required in the clothing and designing fields.

Health/Home Economics

Students can construct charts showing a weekly well-balanced diet as a dietician might plan one. Students can also investigage some of the restrictive diets many persons under hospital care might be required to follow.

A concluding activity in home economics could be the actual preparation of meals in any of the above categories.

Mathematics

The consumer and homemaking cluster is an opportune unit for the math classes to consider checking accounts, personal loans, and credit card buying procedures. Example of budget sheets could be devised to give students experience in home planning.

In math class, word problems can be designed to deal with costs of fabric; e.g., a piece of cloth costs $3.95 per yard. How much would 6 1/3 yards cost at this price?

A more complex set of problems could deal with percentage increase in price from raw material to finished product and subsequent increases from wholesale to retail.

Science

In science class, a study and laboratory experiment can be undertaken with regard to the composition and manufacturing of synthetic fibers. Specific emphasis should be made on the various career areas involved in this specialized category.

Science/Health

In conjunction with the study of nutrition, the skills and knowledge necessary for careers as a dietician, chemist, nutritionist, or food technologist can be explored. Studies of fats, carbohydrates, vitamins, and proteins impress the students with the science background of these careers.

Social Studies

Classes in economics can investigate the concepts of social security, hourly wages, tax deductions, mortgaging, unemployment compensation, etc. Coordinated lessons could be used with word problems and examples in math classes.

Social Studies/Home Economics

In social studies in conjunction with the eighth grade consideration of the rise of the Industrial Revolution in England, a discussion of the cotton and textile industry can be initiated. The various methods and inventions are dealt with in depth in the student textbook, *The Challenge of Change.*

The actual weaving methods can be covered in the arts classes as a "hands-on" activity.

Materials

Career Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Magazine, King Features, New York, New York

Filmstrips:

Food Service
Fashion and Textiles
Pathescope Educational Films, New Rochelle, New York

Textiles – Measures of Civilization, rental $2.00
Textile Art from Tapestries to Jeans, rental $3.50
American Textile Manufacturers Institute
1501 Johnston Building, Charlotte, North Carolina 28281

Films:

Mr. Charles Singley, Burlington Industries
1345 Avenue of the Americas, New York, New York
(Possible trip)

Good Housekeeping Institute (Careers in the firm)
Mr. Saul Schur, 959 8th Avenue, New York, New York 10019

The Pursuit of Cleanliness
Soap and Detergent Association
485 Madison Avenue, New York, New York 10022 – 212-751-6080

Focus – Economic Profile of the Apparel Industry, rental $15.00
American Apparel Manufacturers Association
2000 K Street, N.W., Washington, D.C. 20006 – 202-337-7177

Speakers and/or Trips:

Possible: Fuller Brush salesman – 277-1296; or
Contact Mr. Dolman, local managing director – 688-0810

Avon Products, salesperson – 731-5500

Mr. Saul Schur, Director of Educational Forums
Good Housekeeping Institute – 212-262-7419

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the consumer and homemaking careers. This project could be implemented in the arts classes.
2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

Environment

Environment Cluster

The development of the environment career cluster will enable students as well as teachers to gain a better understanding of the environmental crisis confronting modern man. Dealing with this current situation has created a wide range of career opportunities.

With the use of a variety of activities and media, students can become aware of the need for environmentalists and conservationists on local, state, and federal levels. Although this career area is a relatively new one, there is an abundance of information available from environmental agencies.

It is recognized that ecology subject matter is included on a regular basis by the faculty in most of the disciplines. However, it is hoped that more specific discussions can take place relating to the career potential in this important area.

Procedure

The variety of occupations involved in environmental and natural resource careers needs to be explained to the students. Because of the technical aspect of this cluster, it would be beneficial to have the science faculty involved in this particular explanation. The following list will provide some of the career opportunities:

air analyst
agronomist
aquatic biologist
assayer
audiologist
biochemist
biophysicist
botanist
camp counselor
construction engineer
conservationist
civil engineer
chemist
custodian
cytologist
dairy worker
ecologist
engineer
entomologist
exterminator
fire fighter
fire warden
fish and game warden
field health officer
field inspector
horticulturist
hydrographer
hydraulic engineer
incinerator plant attendant
industrial health engineer
industrial hygienist
industrial inspector
inspector
laboratory attendant
landscape architect
life scientist
lumber worker
mechanical engineer
marine scientist
meteorologist
microbiologist
naturalist
nursery technician
oceanographer
park supervisor
pathologist
physical scientist
physiologist
range manager
sanitarian

florist
food and drug supervisor
forester
forestry aide
fumigator
game keeper
garbage collector
gardener
geneticist
geodisist
geographer
geophysicist
geologist
greenhouse manager
grounds keeper
seismologist
sewage disposal operator
soil analyzer
surveyor
toxicologist
traffic engineer
tree surgeon
urban planner
veterinarian
weather consultant
weed control supervisor
wildlife specialist
zoologist

English

Every community and county has various commissions that deal with local developments in landscape and city planning (city engineer, civil engineer, shade tree commissioner). Students could form groups to interview these community planners. The school district official that is responsible for buildings and grounds could also be a qualified resource person.

Environmental Arts – Fine Arts

In arts class students can make use of photographic equipment in taking pictures of environment-related situations; e.g., surveyors and landscape architects in action, park planners' activities, etc. This project could be incorporated with the science activity cited.

The design of a terrarium by a group of students is also a worthwhile project incorporating artistic as well as scientific knowledge and skill.

Foreign Language

In foreign language classes in conjunction with the cultural study of the country, investigations could be made into environmental problems and how the specific nation is trying to solve them. Specific mention should be made as to the different careers that would be involved in the solution of any environmental-natural resource problem; e.g., availability of oil, lumber, coal, etc.

Health

Students could be assigned investigations of careers related to this cluster and the area of health in general. Oral reports could be required. A motivating lesson might be to send students (with tape recorder) to interview individuals in these occupations. Example questions to be answered:

1. What education is necessary for the job?

2. What practical experience is appropriate?
3. What is the basic salary range?
4. What are the hours of employment?
5. What are the specific job responsibilities?

Specific list of relevant occupations can be determined from the previous cluster list.

Mathematics

The math teacher could construct word problems involving such occupations as:

- biochemist – probability and statistics, ratio and proportion, per cent, and using formulas.
- camp counselor – measurement, measures of central tendencies, dosage of medication (external).
- chemist – ratio and proportion, applying formulas.
- landscape architect – ratio and proportion, scale drawings, measurement, volume.
- mechanical engineer – power and energy formulas, measuring horsepower, ratio and proportion in gears and pulleys, hydraulic power, stress formulas.
- physical scientist – measurement, electrical power formulas, exponents, vectors, and geometry.

As a math assignment, students can do a homework project observing the cars that travel a local road in a given time period. A study can be made estimating the number of cars and persons per car. This activity could then be related to the problems of air pollution and urban planning as well as the concomitant careers which are in the process of coping with these situations.

In math class, a project measuring and estimating area can be undertaken. This assignment can be correlated with the career of surveying. The included worksheet may prove helpful in implementing this activity.

Science

In science class students can be assigned the following environmental project: Locate an environmental problem in New Providence. Write up a discussion of the source of the problem (air, water, noise pollution, etc.). List the vocations and agencies that are or should be involved in solving that particular problem.

Water samples can be analyzed and extensive use of the microscope can be implemented in the science class. Students with greater interest can develop a laboratory manual with graphic displays of the differences in natural organisms.

MEASURING AND ESTIMATING AREA

Object: To determine the area of location immediately adjacent to the school building by estimation and exact measurement.

Materials: Clipboard, 50-foot tape measure, yardsticks, pencils, and recording sheets.

Procedure: Assign students in groups of two to each project. (Many groups can do same project for comparison.)

1. Sidewalk area – measure your pace. Pace off the length and width of the entire sidewalk area. Calculate the area. Then measure the area using the tape and yardsticks. Calculate the area and compare the results.
2. Measure by pace and by tape the entire grass area. Calculate and compare results.
3. Determine area by estimation and actual measurement a large area familiar to the students; e.g., parking lot, ball field, etc.

Compare the area of the familiar field to an acre. An acre is 43,560 square feet.

Make a recording sheet for the areas adjacent to your school building.

Sample

Results	Estimated Length & Width by Pace		Area by Pace	Measured		Area by Measurement	Error	% of Errors
	L (yd)	W (yd)		L (yd)	W (yd)			
Sidewalk (front)								
Lawn (front)								
New Classroom Wing								
Ball Field								

Social Studies

Following a speaker, trip, or visual presentation, general discussion of the crisis that faces the environmentalist and conservationist can be undertaken in English and social studies.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Magazine, King Features, New York, New York

Filmstrip:

"Careers in Conservation" – Pathescope Educational Films
New Rochelle, New York

Films:

"All the Difference"
Eastman-Kodak, Audio-Visual Distribution
343 State Street, Rochester, New York 14650
Order six weeks in advance

"Life in a Drop of Water"
Audio-Visual Department, State Museum, Trenton, New Jersey

"Environmental Films"
Radio/TV Film Officer, Office of Public Information
Environmental Science Services Administration
6010 Executive Boulevard, Rockville, Maryland 20852

Pamphlets, booklets, etc.:

An extensive list of free or inexpensive materials is to be found in *The Introduction to Vocations* (A Teacher's Guide), available at Curriculum Laboratory, Rutgers, Kilmer Campus.

Speakers and/or Trips:

Public Service Utilities, Newark, New Jersey
Mr. Harold Frowery – 622-7000, ext. 2793.
Nuclear energy film and speaker

New Jersey State Hatchery, Hackettstown, New Jersey
Mr. Robert Williams, Superintendent – 852-3676
(Fifteen or more youngsters for tour)

Speaker: Mr. Souci, Federal Bird Bander, Ornithologist
Millington, New Jersey

Stepping Stone Environmental Education Center
RD 2, Box 270, Branchville, New Jersey 07826
Donald S. Calderon, Director – 948-3141

Water Filtration-Purification Plant
Monmouth Consolidated Water Company (Monmouth County)
661 Shrewsbury Avenue, Shrewsbury, New Jersey 07701
Mr. Cecil Rich – 842-6900
Length of tour of plant – 1½ hours (free)

W. L. Hutcheson Memorial Forest
Route #514, Middlebush, New Jersey
For tour arrangements contact Department of Botany
Rutgers University, New Brunswick, New Jersey (free)

The Second Sun-Tour of Ferryboat, set up to show about atomic energy. P.O. Box 47, Hancocks Bridge, New Jersey 08038
(Salem County) 609 – 935-5500
Write for additional information. (free)

The various state parks in New Jersey. Check phone book under Environmental Protection Department.

Longwood Gardens, Kennett Square, Chester County, Pa. 19348
Open to public year round. Length of tour of gardens 1½ hours.
Shoes and shirts required. 215 – 388-6741.

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the environment-natural resources career cluster and list the educational as well as the personal requirements. This activity could be designed as a science and English project.
2. It is anticipated that students with specific interests in the environmental areas would be encouraged by faculty members to to contact the career development team for the extensive information available.
3. Within the classroom setting it is hoped that teachers can further channel assignments in ecology to complement this career theme.

Fine Arts AND Humanities

Fine Arts and Humanities Cluster

The fine arts and humanities occupations are composed of the graphic arts, painting, drawing, sculpture, music, languages, literature, history, and plays. Because of the unique personal talents that are necessary for most of the careers in this cluster, a more student-individualized approach is essential for the successful development of this career area. The faculty should be cognizant of those students displaying artistic or literary talent and encourage them to pursue their interest in this area. This, of course, is an ongoing process which is a constant part of a career development program. The career development team will be available to provide assistance and the implementation of this phase of the career development program.

Procedure

The variety of occupations involved in fine arts and humanities needs to be explained to the students. The English, music, and arts faculty would be most qualified to explain the following list to the students:

actor
agent
anthropologist
archeologist
architect
arranger
art appraiser
art director
art teacher
artist
backstage hand
beauty consultant
bindery worker
biographer
blocker
camera operator
cartoonist
choreographer
cinematographer
ceramic artist
commercial artist
comic illustrator
comic writer
composer
collaborator
clergy
critic
curator
dancer
interpreter
jewelry designer
lay-out designer
linguist
lighting expert
lithographic artist
lyricist
linotype operator
make-up specialist
model
mold designer
music teacher
musician
news person
orchestra member
painter
photo engraver
photographer
plant supervisor
platemaker
playwright
poet
press assistant
producer
proofreader
property person
publisher
reporter
research assistant

delivery worker
designer
director
editor
electrotypers
fashion designer
film cutter
film editor
finisher
free lance advertiser
geologist
graphic artist
hand compositor
historian
illustrator
restorer
scenery specialist
set designer
silk screen operator
sound technician
special effects technician
stage technician
technical writer
technician
translator
typesetter
urban planner
wardrobe person
writer

A year-long development approach with specific involvement in the arts, English, and music classes is suggested so as to encourage the refinement and development of individual talents in these areas.

English

Students can study magazine and newspaper lay-outs and determine the percentage of the page dealing with written news information compared to advertisement.

English classes can gain experience in the advertising field by writing advertisements. This plan could be expanded to include the writing, taping, and illustrating of mass media commercials.

Playwriting is an activity many students find appealing. Many occupations can be explored as part of such an assignment. Adapting work to various media – stage, screen, radio, and television – might be a worthwhile project.

Students enjoy role-playing. Video tape productions could be created by the students simulating the roles of agents and auditioners.

It is hoped that the English department would continue to assign play production, writing, and editing throughout the year. Exceptionally talented students could be encouraged to submit short stories and poetry for contests and magazines.

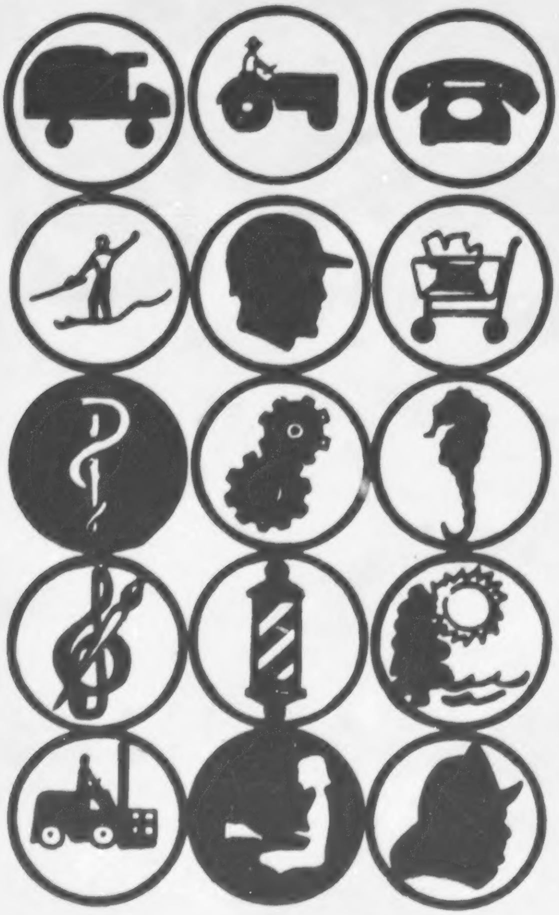
Environmental Arts – Fine Arts

Students are natural doodlers. Effective lessons can be developed using this activity. Cartoon and comic design excites young students. Examination of their favorite daily comic strips will impress the students with the creative skills necessary for this field.

Hands-on experience with developing and processing slides and pictures can be planned. The skills of the photographer can be appreciated by the students as they produce their own work.

Students can be assigned observation activities as they travel outside of school. Examining billboard design along roads and highways and reporting their findings is a valuable assignment. Additional projects can be developed to encourage students to create their own billboards.

The following emblems represent the fifteen career clusters. As each cluster is developed during the school year, career bulletin boards and displays can be created. The students gain "hands-on" experience in illustration, design, and artistic lay-out. Also the school population will identify the emblems with the clusters as they are developed.



Environmental Arts – Home Economics

Puppet shows enable students to compose, design sets and costumes on a small scale. Classes can begin to appreciate the amount of time involved in large productions for the stage and screen.

Environmental Arts – Industrial Arts

Most schools have annual dramatic or musical productions. The industrial arts classes can be involved in the scenery or set design and construction, lighting needs, and properties.

Foreign Language

Translators and interpreters provide important services in today's world. See sample lesson plan at the end of this unit for specific guidelines for a field trip and follow-up activity for this cluster.

Health

In conjunction with studies concerning personal hygiene and personality, health classes can investigate the do's and don't s of creating a positive impression at an interview or audition. Discussions can result concerning poise and make-up.

Mathematics

Lessons involving the math concepts of ratio and proportion lend themselves to consideration of the work of graphic artists, engravers, mold designers. Composers and illustrators must be concerned with lay-out areas. Size reduction is an important skill for many persons in the literary and illustrative vocations. Projects dealing with measurement will give students practical experience with these skills; e.g., measurement – pica, em, column inch.

Occupations concerned with urban planning are contained in the fine arts and humanities cluster. Math classes could undertake projects using graphs, lay-outs, and maps designing and redesigning cities.

Music

Important vehicles in this regard are the various school musicals and operettas, where extensive scenery and lighting are necessary.

With utilization of the "Careers in Music" chart, the music teacher can discuss with the students the variety of careers and qualifications in the music field.

Students can try their hand at lyric writing and setting poetry to music. Students can explore some of their favorite composers and lyricists and their personal biographies.

Physical Education

Physical education classes might find interesting the investigation of the practice sessions of choreographers and dancers and the physical fitness necessary for these strenuous vocations.

Science

Classes could undertake a study of the technical workings of the camera. Students could examine the various mechanical parts and the theories behind its development.

In the world of fashion design, synthetic materials (orlon, dacron, nylon) have become prevalent. In this regard, science classes can make a study of these miracle fabrics in terms of chemical composition and the people responsible for their invention.

Social Studies

Working conditions, salary, and compensation are unique for most jobs in the fine arts and humanities. A study could be made of the origin of the various actors' and musicians' unions and their role in the entertainment world.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Vocational Magazine, King Features, New York, New York

Filmstrips:

Journalism, Graphic Arts, Show Business
Pathescope Educational Films, New Rochelle, New York

Careers in Filmmaking, Parts 1 & 2, rental $8.25 and $8.50
Careers in Illustration, rental $8.75
Careers in Photography, rental $8.75
Careers in Television: Producing and Advertising Commercials, rental $8.50
Careers in Fine Arts, rental $8.75
Educational Dimensions Corporation

Careers in Broadcast News, rental $4.65
To Be a Performer, rental $8.90
University of Illinois, Visual Aids Service, Champaign, Illinois

Speakers and/or Trips:

Barbizon School of Modeling
Montclair, New Jersey, 783-4030
Speaker and literature upon request.

Star Ledger – visitation
(Refer to communications cluster for necessary information.)

George Eicher, New Providence High School
Musicians' Union

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career that could personally interest them. This project could be designed to apply to the music, art, and English classes.
2. It is anticipated that students with specific talents or interests would be encouraged to contact the career development team for more detailed information in the fine arts and humanities.

Example of a Career Awareness Project in the Fine Arts and Humanities Cluster – Field Trip, Foreign Language

1. Overall Description of Activity:

   Twenty French students visited the United Nations and then ate lunch in a French restaurant.

2. Objectives for Language Class:
   - a. Increasing students' awareness of different cultures and languages.
   - b. Enabling students to see first-hand how French is used in daily life.
   - c. Giving students the opportunity to use French in a real situation (in a restaurant, ordering a meal).

3. Objectives for Career Awareness:
   - a. To show students various professions utilizing foreign languages.

4. Preparation and Motivation:
   - a. Discussion of purpose of United Nations, who works there, what the students might expect to see there.
   - b. Discussion of careers to be seen in the United Nations for which knowledge of a foreign language is necessary; e.g., guides, delegates, secretaries, interpreters, sales people, receptionists.

5. The Trip Itself:
   - a. The group was divided into three smaller groups, each with a guide. The guides were all from other countries.
   - b. The students were able to ask questions regarding the work of the United Nations and also the qualifications for working there.
   - c. In the restaurant, all the waitresses, cashier, and maitre d' hote were French speaking, enabling the students to get a feeling for travel and communication in a foreign country; e.g., France. They were also familiarized with some typical French customs, such as adding 15% service (tip) to the bill itself, in addition to the price of the meal.

6. Follow-Up:

   The day following the trip a discussion was held in French class, relating to the various professions which the students saw, for which knowledge of a foreign language was essential.

HEALTH

Health Cluster

Health careers play a vital role in meeting community needs. There are numerous opportunities in this area for people with specialized skills. In this cluster, students will be exposed to the variety of vocations in the health sciences.

Such areas as hospitals, first aid squads, private and voluntary health agencies have personnel available for use in the program's direction. Both knowledgeable speakers and worthwhile trips will be planned.

Procedure

The variety of occupations involved in health careers needs to be explained to the students. It would be a faculty decision to determine who would review and discuss the following list of vocations with the seventh or eighth grade students:

anesthesiologist
biologist
candy striper
chemist
chiropodist
cook
dental assistant
dental hygienist
dentist
dietitian
electrician
food and drug inspector
food service supervisor
food technologist
general practitioner
histologic technician
hospital administrator
hospital housekeeper
hospital service worker
industrial hygienist
inhalation therapist
internist
laboratory technician
laundry worker
licensed practical nurse
medical artist and photographer
medical librarian
medical secretary
medical social worker
medical technologist
nurse's aide
nutritionist
obstetrician
occupational therapist
operating room nurse
opthalmologist
optician
optometrist
orderly
osteopath
pathologist
pediatrician
pharmacist
physical therapist
physician
physiologist
plumber
podiatrist
psychiatrist
public health administrator
radioisotope technician
registered nurse
safety engineer
sanitary engineer
speech therapist
surgeon
surgical technician
veterinarian
vocational rehabilitation counselor
ward clerk
x-ray technician

From *Career Development:* "The Involved Commitment" – Guidebook for Teachers New Jersey Department of Education, Division of Vocational Education and King Features Career Awareness Program.

English:

As part of the English class, a short story activity could be undertaken. In this regard the students could express factual information involving lesser known health careers. The following story context would be appropriate: In an attempt to save the life or improve the health status of a patient, two different skilled persons become involved. Beyond describing the functions of these two individuals, the student could generate his own creativity in this writing exercise. The teacher can refer to the health career list to provide examples from which the student may choose two careers for this assignment.

Environmental Arts – Fine Arts:

In the arts department, a discussion can be undertaken with regard to the specific color schemes that are used in medical offices and hospital facilities.

Foreign Language:

In coordination with the health classes' study of good diets, foreign language students could simulate the work of dietitians by planning a menu in the language they are studying.

Health:

As a career practical nursing offers rewards and satisfaction from helping others. Awareness of this career can come from simple nursing and first aid situations in the health classroom. The variety of bandaging procedures can be explored. In addition, class time can be spent on pulse and temperature procedures. Students and teacher can both benefit from this "hands-on" experience which will serve to further stimulate interest and discussion.

Health/Science:

A filmstrip and accompanying lesson plan is available from Ciba Pharmaceutical, Summit, New Jersey. This aid covers various careers in the field of pharmacy. Lessons can be developed as a coordinated project of the science and health teachers.

Mathematics:

As part of the ongoing project of "Think Metric" the math department could emphasize and discuss the utilization of this means of measurement as it applies to the local pharmacy and prescriptions.

Interested students could be encouraged to visit the local drug store and interview the pharmacist in terms of his overall responsibilities as well as the daily involvement with the metric system.

If possible a pharmacist could be invited to school for a question and answer period.

Music:

As part of the music curriculum, a study can be made of the variety of music which is commonly used in medical-dental situations to relax the patient. Students could be assigned the project of finding records or taping music which would meet this criteria and subsequently present this study as a class report.

Physical Education:

The health cluster concerns itself with various vocations in physical therapy. The physical education classes can gain experience in the work of these individuals through various exercises in muscle development.

Science:

To illustrate careers in laboratory technology and environmental science, it will be necessary to set up two long-term experiments, which require incubation time. You may wish to utilize the Micro-Biology Kit and the Air Pollution Kit prepared by Union Carbide Corporation, P.O. Box 363, Tuxedo, New York 10987, telephone 914-351-2131. The first is an experimental study aimed toward an awareness of micro-organisms. By utilizing culture dishes, commonly used in biology classrooms, bacteria from the surrounding school areas can be studied (drinking fountains, bathrooms, telephones). With careful daily observations and recordings, the student can begin to become aware of careers in laboratory technology.

It is suggested that at least five to ten minutes be utilized to set up a second long-term experiment in air pollution. It is again suggested that a kit from Union Carbide be utilized. This kit is economical and involves a self-enclosed experiment using actual air pollutants, plants, and involves a study of material utilized by environmentalists.

Social Studies:

As a follow-up to the grade six study of man and his physical environment (New Providence curriculum guide), students should now begin a discussion on curriculum necessary in high school for a career in the health areas. This activity can be undertaken by both the social studies teachers and guidance counselor. There is a wall chart prepared by the New Jersey Hospital Association on health related careers.

A study of various contributing scientists in the health and research areas could be undertaken to emphasize the contributions made by individuals in this field.

Social Studies/English:

Within the social studies or English class, students should be encouraged to examine the classified section of various newspapers to see the potential employment possibilities in this career cluster.

Other:

Integrated lesson plans for the health career unit are available in *Introduction to Vocations,* Teacher's Guide, State of New Jersey, Division of Vocational Education, September, 1973. (See the career development team for additional specifics as these lessons progress.)

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Wall Chart (Health related careers)
New Jersey Hospital Association
1101 State Road, Princeton, New Jersey

Popeye Series – Career Awareness Program, King Features,
New York, New York, 212-682-5600 ext. 321 (call collect)

Pamphlet:

"Sources of Information on Health Careers"
National Health Council, Washington, D.C.

Filmstrips:

Health Services, Nursing
Pathescope Educational Films, Inc., New Rochelle, New York

Films:

Helping Hands for Julie
People Who Care
Health Career
New Jersey State Museum Film Library, Trenton, New Jersey
(free loan)

A Bright Future (dental hygiene) (free loan)
Bureau of Audio-Visual Service, American Dental Association
211 East Chicago Avenue, Chicago, Illinois 60611

In a Medical Laboratory
American Cancer Society, local chapter
512 Westminster Avenue, Elizabeth, New Jersey

A Time for Every Season
New Jersey Health Careers Service
Trenton, New Jersey

Speakers and/or Trips:

Overlook Hospital, Summit, New Jersey

St. Barnabas Hospital, Livingston, New Jersey

DARE Clinic, Summit, New Jersey

New Providence First Aid Volunteer Squad (in-school presentation)

Local pharmacist

Visiting nurses' society

Local school doctor and dentist

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the health cluster and list the educational requirements. This activity could be integrated within the social studies and/or English disciplines.
2. It is hoped that students with greater interests in a specific health career would consult the career development team for further information and guidance.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme. (e.g., oral reports, written reports, discussions, debates, extra-credit projects, etc.)

HOSPITALITY AND RECREATION

Hospitality and Recreation Cluster

As a result of shorter working weeks, higher wages, and early retirement, there is an increase in recreational and leisure time activities and the resulting need for people to perform the services. This cluster includes occupations in sports, amusement parks, museums, entertainment, beaches, mountain resorts, camp sites, etc. The variety of occupations is constantly growing. The insight and imagination needed appeals to many young people. The ability to relate to people is more important in this career area than is a strong educational background. The personality factors, abilities, and skills that are needed are many; however, the reward and opportunity of this career area result in an interesting and unusual life style.

Procedure

This cluster would best be explored by the physical education teacher, who could then be an important participant in the career development program. It would be at the teacher's discretion as to when and how this unit could be implemented.

acrobat
amusement operator
amusement park attendant
athlete
athletic director
auto racer
ball boy/girl
bellhop
boating director
bowling instructor
caddy
camp counselor
charter pilot
circus trainer
concession salesperson
convention director
crafts teacher
desk clerk
doorman
entertainer
equipment salesperson
exerciser
exhibitor
flying instructor
golf instructor
golf green attendant
museum director
musician
park administrator
park attendant
physical education director
pool director
promoter
publicity agent
puppeteer
racetrack supervisor
ranger
receptionist
recreation assistant
recreation director
riding instructor
sightseeing guide
skiing instructor
skilift operator
smoke jumper
social director
sports shop owner
steward
swimming instructor
taxi driver
theater manager
tennis instructor

grounds keeper
hotel chef
hotel maintenance engineer
hotel maintenance person
instructor
jockey
judo instructor
lifeguard
magician
master of ceremonies
motion picture projectionist
ticket agent
ticket taker
tour guide
tour promoter
travel agent
travel secretary
umpire
usher
ventriloquist
YMCA director

English/Fine Arts:

Students could create tour brochures promoting a facility about which they might or might not be familiar. Illustrations might be coordinated with the art department. Students should also role-play the parts of travel agents and/or tour guides for these recreational facilities.

Environmental Arts – Industrial Arts:

Students could construct mechanical recreational devices and amusements; e.g., erector set models of ski lift, ferris wheels, etc.

Students might also investigate the recreational facilities of the more familiar parks like Great Adventure and Jungle Habitat in New Jersey. Park plans and maps are available upon request.

Foreign Language:

Students can simulate tours of the major attractions in countries speaking the language they study. Slide and tape presentations can be made with students writing the scripts.

Additional inquiries concerning tourism can be directed to American Express and national tourist bureaus.

Home Economics:

A highly organized responsibility is the management of a fast food service at a major league football, baseball, or basketball facility. Students would be assigned the project of investigating this topic by writing letters and/or visiting major league stadiums or arenas. New York's Madison Square Garden and the Spectrum in Philadelphia provide such tours. After written and/or oral reports are completed, a small scale operation with vendors and food stands could be implemented. This could be planned as part of an annual school field day.

Mathematics:

Interesting word problems dealing with swimming pool construction and maintenance could be developed; e.g., how many gallons of water fill the local community pool? What is the proportionate amount of chemicals for this water volume?

Music:

Written and oral assignments could be designed so as to detail the careers of major musicians involved in the recreation and hospitality cluster; e.g., popular singers, rock groups, well-known bands, etc.

Physical Education:

Local recreation directors are familiar individuals to most middle school students. The director could be invited to speak with classes concerning his community responsibilities.

Science:

The mechanics of leisure time and recreation devices are complex; e.g., ski mobile, bike, ski lift, hydrofoil. Science problems and demonstrations could be implemented explaining their operation. The science concepts of physics would be involved with this project.

Social Studies:

Classes could investigage the history of the ancient and modern Olympic games. Some of the sports have remained throughout history; however, many of the rules governing participation have been modified. Professional and amateur status in international sports can be explained.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Comic Series
King Features, New York, New York

Filmstrips:

Careers in the Leisure Time Industry
Pathescope Educational Films, New Rochelle, New York

Show Business Careers
Pathescope Educational Films, New Rochelle, New York

Films:

So You Want To Be on the Team, rental $15.00
Houghton-Mifflin
Hopewell, New Jersey

National Association of Engine and Boat Manufacturers
Film Library – *Boats Need People* (13 minutes, color)
Department of Creativision, Inc.
295 West 4th Street, New York, New York 10014

National Association of Manufacturers
277 Park Avenue, New York, New York 10017
The Sports Boom – No. 390
Nation on the Go – No. 393

Good Service, National Restaurant Association
1530 North Lake Shore Drive
Chicago, Illinois 60610

Speakers and/or Trips:

Manager, Suburban Hotel
Summit, New Jersey

Holiday Inns local representative

Mr. A. Bartfai, Director of Recreation
New Providence, New Jersey

Local theater group – performer

Great Adventure Amusement Park
Jackson, New Jersey

Jungle Habitat
Milford, New Jersey

Information Organizations:

American Hotel and Motel Association
221 West 57th Street, New York, New York

Chefs de Cuisine Association of America
132 West 48th Street, New York, New York 10036

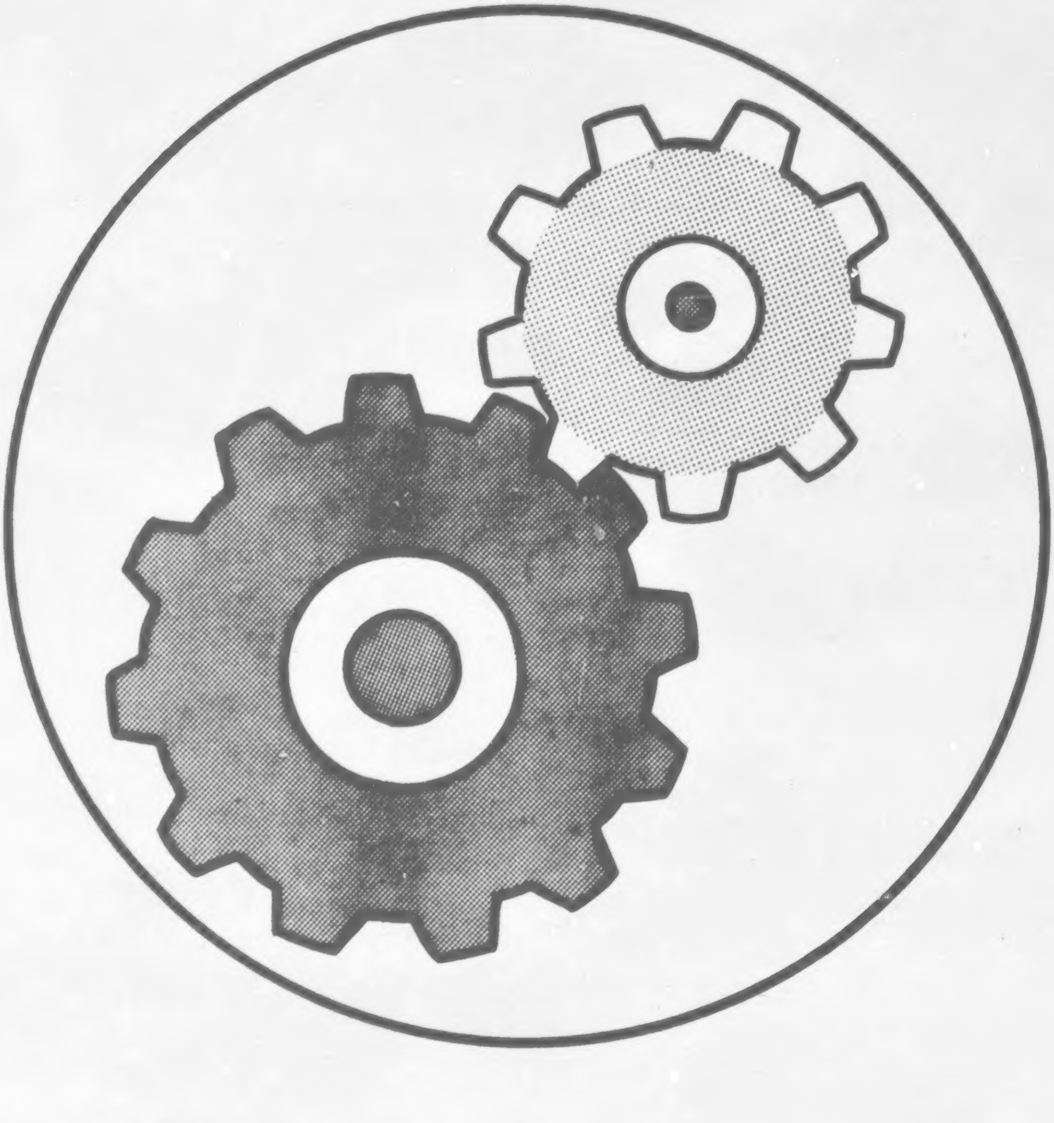
National Association of Professional League Baseball
720 East Broad Street
Columbus, Ohio 43215

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the hospitality and recreation career cluster and list the educational and personal requirements. This activity could be developed in English or physical education classes.
2. It is hoped that students with specific interests in these careers would consult the career guidance team for further information.

MANUFACTURING



Manufacturing Cluster

The manufacturing world encompasses the designing, assembling producing, and distributing of any product not found in nature. Slightly over one-fourth of the United States labor force works directly and/or indirectly in manufacturing. This area offers a wide variety of administrative, skilled, and unskilled positions. It is hoped that the development of this career area will expose students to the organizational patterns of operations, design, production, distribution, and research. A more comprehensive study can also be made in the sub-areas of communications, management, planning and policy administration, data interpreting, personnel, and labor relations.

Procedure

The variety of occupations involved in manufacturing careers needs to be explained to the students. It would be a faculty decision to determine who would review and discuss the following list of opportunities with the students:

accountant
advertising agent
aerospace engineer
apprentice
arc cutter
arc welder
assembly line worker
bench assembler
carpenter
caster
chemist
civil engineer
company president
computer operatoe
consumer researcher
controller
craftsman
data processor
designer
die maker
draftsman
electrician
engineer
floor assembler
forklift operator
gas welder
general manager
inspector
lathe operator
lay-out person
machinist
maintenance engineer
manager
material handling supervisor
mathematician
merchandiser
millwright
oxygen cutter
packer
painter
pattern maker
personnel director
physicist
planning administrator
plumber
press operator
production controller
programmer
public relations director
receiving supervisor
repair technician
researcher
resistance welder
safety engineer
sales manager
sales representative
secretary
shipper
shop steward
supervisor
technician
tool maker
traffic supervisor
vice president
welder

English:

As part of the English curriculum, a term paper could be assigned in which each student would research the history of the assembly line "technique" Correlated to this activity would be a secondary series of chapters describing a particular company and how it utilizes the assembly line. In this instance, youngsters would be required to write letters to various corporations to ascertain information. A lesson in letter writing could be integrated into the project.

An appropriate activity during this unit could be the learning experience of filling out various employment applications. This type of activity is ideally suited for the English class where the teacher can provide guidance and insight in this important "hands-on" learning situation. Sample applications are enclosed in this section of the career booklet.

Environmental Arts – Home Economics:

Assembly line production of small cloth items could be simulated; e.g., one group of students cuts the cloth from patterns, the second group cuts the lining, a third group is responsible for the sewing and a fourth group presses the completed item.

Home economics classes could visit any of the food production and distribution companies in the area. (See list at the end of the unit.)

Environmental Arts – Industrial Arts:

As part of the arts class, youngsters could design and construct from wood a number of houses, boats, airplanes, etc. All of these items of a particular kind would have interchangeable parts and, upon completion of said parts, an assembly line could be organized as a "hands-on" activity to demonstrate the assembly line technique.

Extracurricular:

Students can learn practical management skills by working in the school store.

Foreign Language:

In the foreign language classes as students are given assignments in the cultural study of the country, projects can be considered in terms of the types of manufacturing in that particular nation.

Health:

As part of a unit on safety, some of the precautionary methods taken by local industries can be investigated by the students.

Mathematics:

With the aid of the math faculty, students could consider the work of accountants, advertising agents, company presidents, data processors, electricians, machinists, and researchers as their responsibilities relate to math skills. For example, cost analysis and specification in accounting, profit and mark-up problems investigated by company presidents, scales and tables used by electricians and machinists, and probability and statistics used by processors and researchers.

In math class word problems could be designed with a general theme of manufacturing involved in their solution; e.g., the raw materials needed to build a new Comet car cost $1,500. The price of labor to assemble each vehicle is $800. The manufacturer has determined that a 30% profit is necessary to pay executive salaries, maintenance costs, sundry expenses, etc. What should the retail price of each car be? Also, remember to add an additional 5% for the New Jersey sales tax.

Music:

In music class a study can be undertaken to determine the varieties of music that tend to increase man's productivity and efficiency in a manufacturing atmosphere.

Science:

Most communities have a wealth of resources for the manufacturing career cluster. Physicists, as well as electrical and civil engineers, can be invited into the science class to discuss their individual educational backgrounds and professional responsibilities.

Social Studies:

As the students begin a study of the Industrial Revolution and its technological and social aspects, various manufacturing careers can be thoroughly considered. There are numerous jobs, for example, that directly involve the automotive assembly line.

In conjunction with the New Providence eighth grade social studies curriculum, a study of geographical influences on manufacturing can be accomplished. Consideration of the growth of individual industries during the modern age is an integral part of the eighth grade studies.

Materials:

Career Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Series, King Features
New York, New York

Filmstrips:

Fashion and Textiles
Computers
Business Administration
Engineering
Pathescope Educational Films, New Rochelle, New York

Films:

Occupations and Opportunities – Drafting
Visual Aids Service, University of Illinois
1325 South Oak Street, Champaign, Illinois 61820, rental $5.70

Careers in Machine Trades
American Personnel and Guidance Film Department
1607 New Hampshire Ave., Washington, D.C. 20009, rental $5.00

Careers in Large Industry
So You Want to be a Tool and Die Maker
Houghton-Mifflin, Pennington-Hopewell Road, Hopewell, New Jersey
609-466-1950, rental, $15.00

Manufacturing of Soda
Contact Coca-Cola Bottling Company of New York, Inc.
74-12 88th Street, Glendale, New York 11227
Attention: Mr. Peter Chletsos – 212-894-2626

Speakers and/or Trips:

General Motors, Linden, New Jersey
Call Mr. Hoffman – 862-6700

Ford Plant, Mahwah, New Jersey
Call Mr. Healy – 529-2000, ext. 241

Junior Achievement, Mr. Roden, Executive Vice President, Union Co.
East Broad Street, Elizabeth, New Jersey – 355-1002

New Jersey Manufacturers' Association
Mr. Twitmire (film speaker)
Sullivan Way, Trenton, New Jersey – 609-883-1300, ext. 420

Union Carbide
Mr. Mounts, chemical engineer, New Providence resident

Manufacturing Career Field Trips:

Campbell Soup Company, Camden, New Jersey – 609-964-4000
Tuesdays or Thursdays, 40 students maximum

Kohner Brothers, Inc., Elmwood Park, New Jersey – 797-9500
Assembly of cuckoo clocks, games.

Alexander-Reynolds, Hackensack, New Jersey – 342-7600
Assembly and manufacture of minibikes.

Fodero Dining Car Company, Bloomfield, New Jersey – 743-8085
Custom made railroad dining cars.

Magic Marker Corporation, Bellmawr, New Jersey – 609-424-5880
Twenty students maximum.

Seven-Up Bottling Company, Plainfield, New Jersey – 756-6300
Twenty students maximum.

Nabisco, Inc., Fairlawn, New Jersey – 797-6800
Groups of twenty.

Clinton Milk Company, Newark, New Jersey – 243-8433
Groups of twenty.

Ohaus Scale Corporation, Florham Park, New Jersey – 377-9000
Eighth grade, twenty-five students.

Public Service, Newark, New Jersey – 622-7000 ext. 3227
Fifty students for generating station.

American Can Company, 600 North Union Ave., Hillside, New Jersey
Attention: Mr. Cresitello – Indicate 35 youngsters (give three possible dates) – 686 3000, ext. 224 – Tours: 9:30 a.m.

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the manufacturing career cluster and list the educational as well as personal requirements. This activity can be done as a writing experience in the English class.
2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

SAMPLE #1

EMPLOYMENT APPLICATION

PERSONAL

Name (print) ______________________ Soc. Sec. No. ________
Last First Middle

Present Address ______________________ Phone ________
No. Street City State Zip

Last previous address ______________________ U.S. Citizen? ________

If you have any physical defects, state the nature ______________________

Present draft classification ____________

EDUCATION

Type of School	Name & Address	Year Started	Year Left	Graduated (Degree)	Course or Major
Grammar					
High or trade school					
College/university					
Other					

MILITARY

Branch of military service ______________ From ________ To ______

Training ______________________

PLACEMENT

Position wanted ______________ No. years experience in this work ______

Other skills ______________________

Starting pay expected ______________ Date available for work ________

WORK HISTORY (List in order, last or present employer first)

Employer	Rate of Pay	Type of Work	Reason for Leaving	Dates From To
Name				
Location				
Supervisor				
Name				
Location				
Name				
Location				

PERSONAL REFERENCES (not employers or relatives)

Name	Address	How Long Known

Date ________ Signature ________________

DO NOT WRITE BELOW THIS LINE

Comments ____

A. Interviewed by ______ Date ______ C. Interviewed by ______ Date ______

B. Interviewed by ______ Date ______ D. Interviewed by ______ Date ______

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SAMPLE #2

APPLICATION FOR EMPLOYMENT

PERSONAL INFORMATION

Date ________ Soc. Sec. No. ____________________

Name ____
Last First Middle

Present Address ______________________________________
Street City State Zip Code

Permanent Address ____________________________________
Street City State Zip Code

Phone No. ____________________

Citizen of U.S.A. Yes ____ No ____

If Related to Anyone in Our Employ State Name and Department Referred By

EMPLOYMENT DESIRED

Position Date You Can Start Salary Desired

Are You Employed Now? If So, May We Inquire of Your Present Employer?

Have You Ever Applied to This Company Before? Where? When?

EDUCATION	Name and Location of School	Years Attended	Date Graduated	Subjects Studied
Grammar School				
High School				
College				
Trade, Business or Correspondence School				

Subjects of Special Study or Research Work

What Foreign Languages Do You Speak Fluently? Read? Write?

U.S. Military or Naval Service Rank Present Membership in National Guard or Reserves

Activities Other Than Religious, Civic, Athletic, Fraternal, Etc.

FORMER EMPLOYERS (List below last four employers, starting with last one first.)

Date Month and Year	Name and Address of Employer	Salary	Position	Reason for Leaving
From				
To				
From				
To				
From				
To				
From				
To				

REFERENCES: Give below the names of three persons not related to you, whom you have known at least one year.

Name	Address	Business	Years Acquainted
1			
2			
3			

PHYSICAL RECORD:
List Any Physical Defects

Were You Ever Injured? Give Details

Have You Any Defects in Hearing? In Vision? In Speech?

In Case of Emergency, Notify

Name Address Phone No.

I authorize investigation of all statements contained in this application. I understand that misrepresentation or omission of facts called for is cause for dismissal. Further, I understand and agree that my employment is for no definite period and may, regardless of the date of payment of my wages and salary, be terminated at any time without any previous notice.

Date Signature

DO NOT WRITE BELOW THIS LINE

Interviewed By Date

REMARKS:

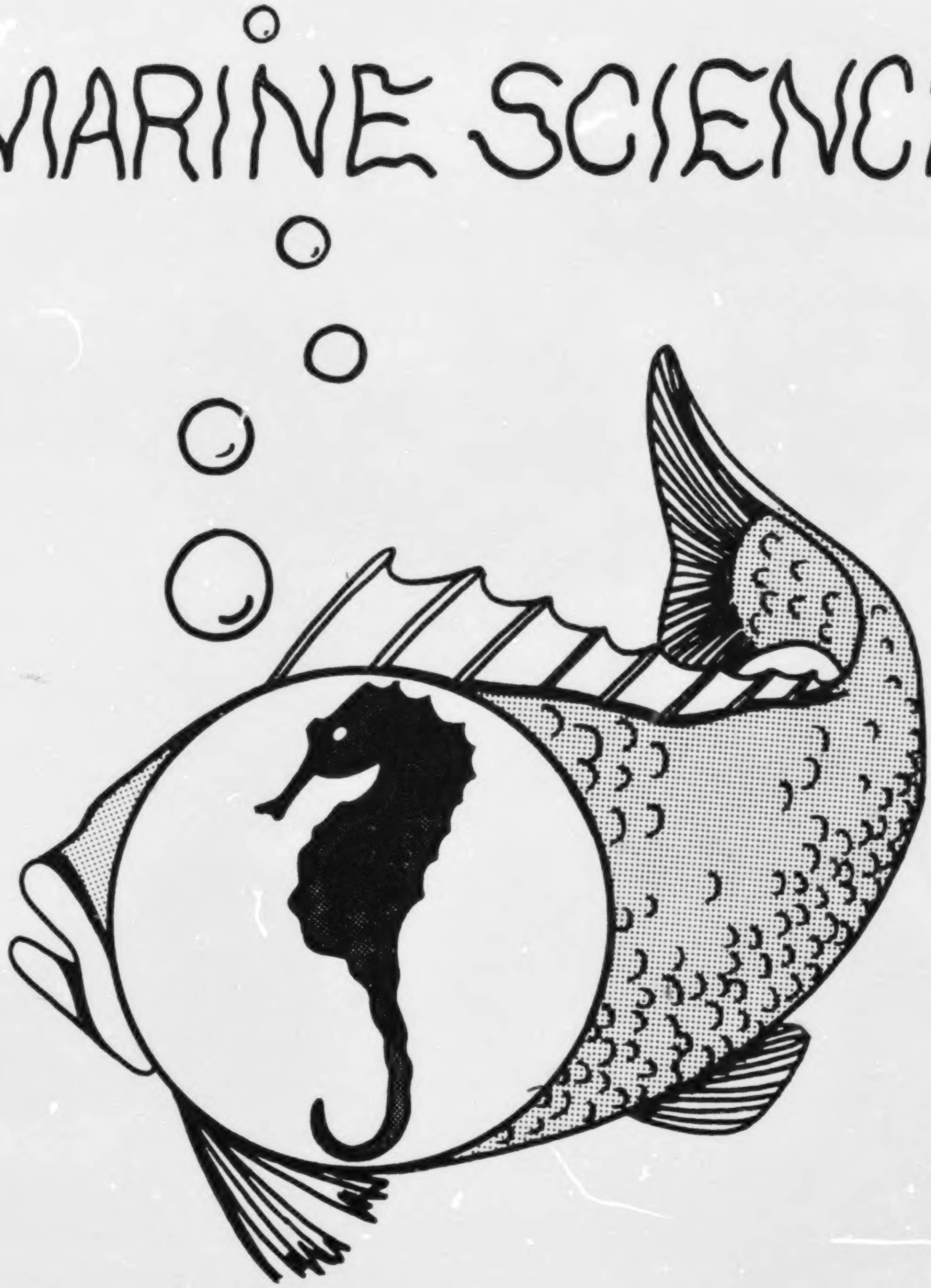
Neatness		Character	
Personality		Ability	

Hired For Dept. Position Will Report Salary Wages

Approved: 1. 2. 3.

Employment Mgr. Dept. Head General Manager

MARINE SCIENCE



Marine Science Cluster

With occupations relating to the oceans and the plants, animals, and minerals there, the marine science career cluster is a fascinating one for middle school students. Many teachers have discovered that students are highly motivated when lessons involve consideration of the marine science area. The talents, skills, personal characteristics, rewards, and disappointments should be explained to the students.

In today's society the expansion of this career area is due to the American public's concern with the environment and the ever present need for new sources of energy and food supplies. In attempting to solve this crisis, many vocations concern themselves with chemical and mineral research like the aquatic biologist, laboratory technician, or chemical extractor. A highly scientific and technical background is essential for such research.

For every research scientist there must be field assistants and laboratory technologists – individuals in the field collecting and analyzing marine and bacteria samples. These workers provide valuable services that cannot be overlooked.

Another area of countless employment opportunities in this cluster is the fishing industry. Fishers, processors, mechanics, and divers are the conscientious workers that determine the success of this important industry.

Off-shore drilling by major oil companies has been a controversial topic. Drilling supervisors, dredge operators, mariners, and boatmen are only a few areas of employment important to the success of these operations.

The marine science cluster offers new and exciting positions with promising and challenging futures.

Procedure

The list of careers that are included in the marine science cluster needs to be explained to the students. It would be a faculty decision as to who would describe and discuss these careers with the classes. Because of the scientific nature of many of the careers, the science department might want to especially undertake this activity.

aquanaut
aquatic biologist
bacteriologist
biological oceanographer
botanist
cartographer
chemical oceanographer
chemical extractor
computer data specialist
deep sea diver
deck hand
ecologist
life scientist
life guard
marine engineer
marine architect
marine geologist
marine geophysicist
marine geographer
mariner
meteorologist
marine engine machinist
motor boat mechanic
oceanic geographer

fish retailers
fish wholesalers
drilling supervisor
driller
dockmaster
fisher
dredge operator
diving supervisor
fishing boar captain
fish processor
fish farmer
fish culturist
fish and game warden
geographer
geological oceanographer
hatchery person
hydrographer
hydrologist
ice fisher
kelp cutter
laboratory tester
laboratory chief
oceanographer
oceanographic engineer
ocean miner
physical oceanographer
processor
photographic oceanographer
sailor
sea patrol
seaquarium manager
seal hunter
spear fisher
scuba diver
skin diver
seismographer
sponge gatherer
tool pusher
technician
vessel operator
water surface specialist
water tester
water environmentalist
zoologist

English:

Many students are natural debaters. One of the most controversial questions facing local, state, and federal environmental agencies and energy commissions is that of off-shore drilling. As part of a unit on debating techniques, English classes could consider this issue. Students can explore the following sources for information:

1. American Conservation Association
   30 Rockefeller Plaza, New York, New York 10020

2. American Oil Company
   910 South Michigan Avenue, Chicago, Illinois 60680

3. American Petroleum Institute, Public Affairs
   1271 Avenue of the Americas
   New York, New York 10020

4. Environmental Protection Agency
   Water Quality – Public Information
   Room 702 – 1626 K Street, N.W., Washington, D.C. 20460

5. Shell Oil Company
   50 West 50th Street, New York, New York 10020

6. U.S. Department of the Interior
   Office of Gas and Oil, Washington, D.C. 20240

With the information received from these bureaus, students can base their arguments on factual information.

Many novels have been written with the sea as a central theme; e.g., "The Old Man and the Sea" and "Captain Courageous." Each student could be assigned the reading and reporting of one such book in English class.

Environmental Arts – Fine Arts:

Art classes can take a field trip to the Hackettstown fishery. Armed with sound and photography equipment, groups of students can create programs depicting the careers they observe in action. These audio-visual projects can be rewarding for students in their artistic as well as practical aspects. A variety of media can be used; e.g., 8mm cameras, cassette tape recorders, movie cameras, and slide cameras.

Environmental Arts – Home Economics:

In conjunction with a study of foods and their essential vitamins and minerals, home economics classes can research the nutritional value of fish. Inexpensive meals can also be prepared by the students. Students can contact fish retailers as well as wholesalers to learn about the preservative measures used to insure freshness.

Foreign Language:

As part of a cultural approach to foreign language study, students could write letters in Spanish or French to certain governmental bureaus of the country they are studying. Information should be requested about that particular nation's involvement with marine sciences; e.g., fishing industry, improvement of harbors, etc.

Health:

The American Medical Association has recent information concerning some of the public health dangers of water pollution. Health classes could write and request this information and concentrate their discussions on the problems of our nation's oceans. (Write c/o American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.)

Mathematics:

Word money problems could be developed with the selling of fish in mind. Example: A commercial fishing boat sells its catch of tuna for x amount of dollars to a local wholesaler. He in turn adds x percent to the original buying price which is paid for by the packager, who then processes the food into 1,000 cans ready for sale to the supermarket. The packager wants to insure a profit of 30% over the price he paid the wholesaler. How much would each can cost the supermarket?

Physical Education:

Students are fascinated with swimming, diving, and underwater operations. Many local YMCA's have instructors that are capable speakers and also provide demonstrations. From these individuals physical education classes could gain valuable information concerning this area of marine science.

Science:

The marine science cluster includes countless technical personnel. The science faculty could take the list of careers and define the responsibilities of each of these individuals. Additional student assignments could be to explore the science courses that persons in these occupations must pursue prior to employment.

Science classes can be shown the film "Life in a Drop of Water" (State Museum – color film – Trenton, New Jersey). Subsequent laboratory tests and samples of water can be included in the unit. The students can record their findings and draw conclusions as to the organisms they discovered. This activity will allow students to simulate the work of laboratory testers, aquatic biologists, and bacteriologists.

Social Studies:

As part of a geography unit, students can simulate the work of cartographers and marine geographers by mapping out various sea and ocean locales. The National Oceanographers Association in Washington, D.C., will provide samples and pamphlets that students can examine for a greater understanding of these technical careers.

Materials

Career World Magazine
Curriculum Innovations, Highwood, Illinois

Popeye Magazine
King Features, New York, New York

Films:

Bell Telephone Company, Public Relations (local office)
"The Restless Sea" (53 minutes)

National Association of Manufacturers
277 Park Avenue, New York, New York 10017
No. 383 "Wealth from the Sea" (13 minutes)

State Film Museum Library
Trenton, New Jersey
"Life in a Drop of Water"

Literature and/or Pamphlets:

National Oceanography Association
1900 L Street, N.W., Washington, D.C. 20036

American Petroleum Institute, Public Affairs
1271 Avenue of the Americas
New York, New York 10020

Humble Oil and Refining Company, Public Relations
Room 4190, P.O. Box 2180, Houston, Texas 77001

National Fisheries Institute
1614 Twentieth Street, N.W., Washington, D.C. 20009

International Oceanographic Foundation
Room 113, 10 Rickenbacker Causeway
Virginia Key, Miami, Florida 33149

Speakers and/or Trips:

Hackettstown Fishery, New Jersey State Hatchery
Mr. Robert Williams – 852-3676 (tour of facilities)

Environmental Protection Agency, Surveillance and Analysis
Division, Edison Branch
Ask for Mr. Richard Dewling (water and air)

Environmental Protection Agency
Mr. Royal Nadeau, marine biologist – 548-3347, ext. 575
Mr. Peter Anderson, field research – 548-3347, ext. 555

See Appendix for list of additional materials.

Culminating Activities

1. From the list of marine science careers provided at the beginning of this unit, students should select a vocation and list career opportunities and requirements.
2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

MARKETING AND

DISTRIBUTION

Marketing and Distribution Cluster

Management, research, purchasing, sales promotion, selling, and distribution are the major areas related to the marketing and distribution career cluster. In our contemporary society this cluster affects almost all of us since we are consumers of goods and services. Whether it is a small purchase of a Bic pen or the selection of a new car, we are experiencing the phenomena of marketing and distribution.

While most people picture the salesperson as the major vocation in this cluster, there are a variety of other stimulating career possibilities. Many of these people the consumer never sees, but their importance can not be underestimated. In this category would be the wholesale business person who sells his goods to the local merchant, as well as the traffic manager who insures the shipment's prompt arrival to its final destination.

As one can see, there are extensive opportunities in this cluster and it is hoped that the student who is interested in marketing will examine as many different vocations as possible.

Procedure

The list of careers in the marketing and distribution cluster needs to be explained to the students. It would be a faculty decision as to who would be responsible for this activity.

accounting executive
advertising assistant
advertising copywriter
advertising manager
auctioneer
billing machine operator
bill poster
batcher
bookkeeper
broker
buyer
consultant
catalogue coordinator
cashier
credit analyst
commercial artist
credit manager
custom house broker
economist
display worker
delivery person
demonstrator
exporter
fashion coordinator
floor manager
foreign trade consultant

market analyst
model
office machine service technician
package designer
public relations personnel
purchasing agent
product designer
product manager
redemption clerk
receiving clerk
research director
recruiter
route person
sample distributor
sales manager
salesperson
sales engineer
secretary
sign writer
shipping clerk
shopper
store buyer
statistician
store executive
survey worker
stock clerk

- house-to-house salesperson
- foreign clerk
- foreign language stenographer
- jobber
- home representative
- inspector
- importer
- industrial salesperson
- insurance agent
- interviewer
- manufacturer's engineer
- market master
- soliciter
- standards supervisor
- supervisor
- traffic manager
- typist
- tabulator
- stock person
- warehouse person
- wholesaler
- world trade manager

English:

The personal qualities of salesmanship that are necessary in marketing and distribution careers could be incorporated into student role-playing as the English classes consider this cluster. Groups of students might create sales demonstrations as well as soliciting and sampling projects, all of which would be aimed to insure the successful marketing of a consumer product.

As an English unit of study, students could be assigned the reading and discussion of such documentaries as *The Hidden Persuaders* by Vance Packard. This type of book should provide the student with the opportunity to examine the advertising techniques of big business.

Environmental Arts – Fine Arts:

Without the valuable services of individuals in the world of advertising, the marketing and distribution of consumer goods and services would encounter numerous obstacles. Through individual student advertising campaigns, art classes could simulate the work of advertising managers, copywriters, catalogue coordinators, commercial artists, display workers, and designers. Various art supplies and media could be incorporated in this project. A culminating activity could be an advertising display contest in which students could determine which goods or services they would most likely purchase due to the effectiveness of the various advertising campaigns.

Environmental Arts – Home Economics:

Supervision of food packaging and control of standards of production are vital areas in this cluster. The home economics classes could examine various packages in terms of their durability and standards of sanitation.

Environmental Arts – Industrial Arts:

Most school buildings have display cabinets and/or bulletin boards. Industrial arts students could experiment as display window designers for large department stores.

Foreign Language:

Export and import businesses require personnel with varied educational backgrounds and skills. Foreign language classes could write to various international firms and request information relating to careers requiring a working knowledge of a second language. As an additional school activity some students could transcribe lessons and business letters as would a foreign language stenographer.

Health – Physical Education:

Many large companies insist that their personnel have regular complete physical examinations. The health classes could discuss some of the physical strains experienced by the individuals involved in this career cluster; e.g., tension, fatigue, etc. Likewise, a discussion of proper diet and conscientious exercise could be undertaken in the physical education classes.

Mathematics:

While the adding machine, pocket calculator, and sophisticated cash register have attempted to increase speed and efficiency, students should be aware that not all businesses have access to these devices. In this regard math teachers should emphasize the realistic importance of basic mathematics and its daily application in marketing and distribution. Appropriate problems could be developed with the following items:

1. Advertising agent: graphing arts and measurement, cost analysis, and specifications.
2. Company executive: sales and sales tax, mark-up, and selling merchandise.
3. Market researcher: probability and statistics, applying formulas, reading tables.
4. Statistician: retail pricing, profit margins, credit loans, and cash and trade discounts.

Music:

Through radio and television advertising, certain musical numbers have become identified with particular products. Students in music classes could analyze these forms of musical advertisement and discover reasons for their effectiveness.

Science:

In recent years office machines (ditto and mimeograph) have been used extensively. In science class, students could research the invention and development of these devices as well as learn how they operate. Emphasis should be made on the physical concepts involved with these machines; e.g., what does the electrical current set in motion? What is involved in the production of printed matter on a blank page fed into the machine?

Social Studies:

The responsibility of the traffic manager includes reading road maps and devising the best and quickest routes to a destination. As part of a geography lesson in social studies, students could simulate the activities of this vocation by dividing into groups and competing to find the best route to a specific location.

Materials:

Career World Magazine
Curriculum Innovations, Highwood, Illinois

Popeye Magazine
King Features, New York, New York

Filmstrips:

Careers in Sales
Pathescope Educational Films, New Rochelle, New York

Films:

Modern Talking Picture Film Service
1212 Avenue of the Americas, New York, New York
"Salesmanship – Art and Science" (25 minutes)

National Association of Manufacturers
277 Park Avenue, New York, New York 10017
No. 386 – "Two-Way Street" (import and export)
No. 409 – "Women Mean Business"
No. 414 – "Getting Started" (small business)
No. 449 – "Miracle Market" (supermarket)
No. 450 – "What's On Your Mind?" (consumer research)
No. 479 – "Luxuries or Necessities"
No. 484 – "Supermarket for Industry" (factory supplies)

National Cash Register Company
Marketing Services Department, Dayton, Ohio 45409
"Tomorrow's Retail Systems" (30 minutes)
"A Customer Is a Customer Is a Customer" (30 minutes)

Trips:

E. J. Korvette
State Highway 35, Woodbridge, New Jersey 07095
Contact Eve Nelson of Public Relations, New York office
1180 Avenue of the Americas, New York, New York

Bamberger Company, Division R. H. Macy
Mr. Cost, Director of Personnel – 565-4774
Tours can be arranged for a maximum of 25 persons

Local merchants (New Providence)
Contact Summit Area Chamber of Commerce

See Appendix for list of additional materials

Culminating Activities

1. From the list of marketing and distribution careers provided at the beginning of this unit, students should select two topics and be able to list career opportunities under each heading.
2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

Name________________________

Complete this purchase order:

Purchase Order # 4259

ACE PLUMBING SUPPLY COMPANY

Date 4/30

For Miller's Plumbing Phone 443-2021

Address 14 Bridge Blvd. City Gary, Indiana

Quantity	Item	Unit Cost	Cost	Discount	Net Cost
5	¾" unions	.75		20%	
	¾" 45° ells	.55	3.30	30%	
4	¾" valves		9.00	25%	
12	¾" x 6" nozzle		9.60	%	8.16
	¾" faucets	1.75	8.75	%	7.00
10	¾" 90° ells		6.00	%	4.20
18	¾" fittings	.20		35%	
	¾" T-joints	.45		20%	2.16

Total____________

Less 2%____________

Cash Discount____________

Net Total____________

PERSONAL SERVICE

Personal Service Cluster

Without the valuable contribution of the personal service occupations, many of the conveniences people have come to appreciate would not operate. Some of the job families within this cluster include occupations in lodging service, domestic services, laundry and apparel service, barbering services, domestic animal care, and food preparation service.

These occupations are distinguished by the fact that individuals seeking the services do have the option of selection. Thus, there is great opportunity for private self-employment in a variety of specialized areas. The key to this entire cluster is the concept of service. While it is true that most occupations involve providing some service to the public, the ones listed below are highly oriented toward this concept. In this regard, it should be stressed that such occupations and professions are crucial to the welfare and convenience of individuals in today's society.

Of significant importance is a person's ability to please the public with a personable appearance and manner. This characteristic can well be the intangible ingredient contributing to a greater personal and financial reward.

Procedure

The variety of occupations involved in personal service careers needs to be explained to the students. It would be a faculty decision to determine who would review and discuss the following list of vocations with the students. A working definition: a broad-based category including a variety of occupations and professions which provide service to the general public either in a singular or group-type capacity. A personal service is one which is rendered to an individual who seeks the service of a particular group or individual.

animal keeper
animal trainer
airline flight attendant
baker
barber
bartender
bar attendant
bellhop
butcher
butler
chef
chauffeur
cosmetologist
child care attendant
caterer
cook
dietician
dog groomer
dressmaker
dry cleaner
day worker
electrologist
health salon operator
housekeeper
hotel manager
hostess
kitchen help
kitchen supervisor
karate supervisor
kennel operator
laundry worker
maid
manicurist
massager
marriage counselor
maintenance worker
page
piano tuner
porter
psychologist
rug cleaner
room service
school bus driver
steward

elevator operator
escort
exercise attendant
exterminator
fountain person
funeral director
guide
hatter
hair stylist
steamroom attendant
social worker
show repair technician
tailor
valet
veterinarian
weight reducing counselor
wine steward
waiter

English:

As part of the English studies, each youngster could be assigned the interview of a local individual who is in a personal service oriented occupation. Students should be able to accurately discuss the services this person performs and the educational background he has had. Classes should concern themselves also with the writing skills necessary for success in these careers.

English/Fine Arts:

Personal service vocations lend themselves to intensive advertising compaigns: television, radio, and newspaper. Under teacher expertise and supervision, students would investigate, analyze, and compare the effectiveness of competitive ads; e.g., Vic Tanny vs. European Health Spa, etc. Likewise the cost of smaller scale advertising could be discovered by questioning the management of the local newspaper. Comparison hands-on activities could be student-created advertisements of the graphic variety. Likewise the video tape recorder could be utilized in a similar manner.

Environmental Arts – Home Economics:

To demonstrate the division of labor in catering services, the home economics faculty could organize a catering project in which students would prepare such a breakfast meal for the faculty and/or peers. As part of this activity, a caterer would be interviewed to obtain his experienced insight as to the division of labor necessary for efficiency. The students could perform the duties of waiters, bus persons, kitchen help, cook, maitre d', baker, chef, and hostess.

Foreign Language:

The responsibilities of airline flight attendants are numerous. All international airlines insist on bilingual qualifications for these individuals. Eastern Airlines, for example, has personnel willing to speak to classes concerning the preparatory language courses one should consider for a future with this service.

Mathematics/Home Economics:

Many of the persons in this cluster must utilize math in order to successfully compete with others offering the same service. Specific math problems could be developed around the work of the tailor who has to take cloth and cut it in the most sensible way to pattern a well made suit. Example: Given a specific pattern, how much cloth which comes in three-foot wide rolls would a tailor need to make a suit for a customer, size 42? Subsequent problems could then involve material costs as well as labor.

A logical follow-up lesson might be the actual creation of such a suit in the sewing instruction class.

Physical Education:

The personal service cluster includes such individuals as weight reducing counselors, steamroom attendants, massagers, karate attendants, health salon operators, and exercise attendants. Some of the skills and experience necessary for these careers could be explored in physical education classes. In school demonstrations of these services could be undertaken.

Science:

As part of the science program, a local veterinarian could be invited to speak to the classes concerning his training, daily responsibilities, etc.

Science/Health:

The barbering and cosmetology and related services are included in this cluster. In this area a number of over-the-counter medications are used to service the public – shampoos, hair tonics, sprays, creams, lotions, etc. Students would do research to discover the various ingredients that are used in a particular barbering or beauty aid. Specific emphasis should be made on what each ingredient purports to do and whether there are any dermotological contraindications, etc.

Social Studies:

Many people in personal services are members of unions which maintain standards of excellence and/or help establish uniform prices. One such example is the barbers' union, AFL-CIO. Students would be assigned a written report exploring any one of the unions representing people in the personal services. Some of the important areas to be examined could be:

1. History of the union.
2. What is its function?
3. Are there benefits for barbers to belong or is it a closed shop structure?

Since many social studies curricula examine the capitalistic free enterprise concept, a corollary activity could be the selection of a personal service occupation. A group of students could then interview three people in this vocation and decide which one they would select to serve them. Specific reasons for their personal selection should then be discussed at length so as to provide an opportunity to justify this particular choice.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Magazine
King Features, New York, New York

Filmstrips:

Careers in Beauty and Fitness
Careers in Social Work

Films:

Ford Motor Company, Film Library
The American Road, Dearborn, Michigan 48121
"Auto Mechanic and the Technician" (23 minutes)

Modern Talking Picture, Film Service
714 Spring Street, Atlanta, Georgia 30308
"Creative World of Interior Design" (15 minutes)

National Association of Manufacturers
277 Park Avenue, New York, New York 10017
No. 401 – "Beauty of Production Line"
No. 475 – "The American Look"
No. 487 – "Weather or Not"
No. 491 – "Fabric Care Magic"

Speakers and/or Literature:

New Jersey Bell Telephone Company
329 Amboy Avenue, Woodbridge, New Jersey 07095

New Jersey Restaurant Association
Rt. 27 and Parsonage Road, Menlo Park, New Jersey 08837

American Hotel Association
Educational Institute
221 West 57th Street, New York, New York 10019

American Institute of Interior Design
673 Fifth Avenue, New York, New York 10022

Hairdressers' Association
175 Fifth Avenue
New York, New York 10010

Beauty and Barber Institute
46 West 46th Street, New York, New York

Local individuals in personal service careers can be contacted for interviews and programs.

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the personal service career cluster and list the educational and personal requirements. This activity could be designed as a project in almost all of the disciplines mentioned in the procedure.
2. It is anticipated that students with specific interests in personal service careers would be encouraged to contact the career development team for more specific guidance and information.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

PUBLIC SERVICE

Public Service Cluster

Occupations in public service involve such areas as administration and regulation, urban development, arts and humanities, education, protective services, public utilities, labor affairs, social services, rehabilitation, and correction.

All of the careers are involved directly with either the local, state, or federal governments. These persons play vital roles, without which our communities could not function. Perhaps the most familiar government employees to the student are the teacher, principal, school nurse, librarian, and janitor.

In protective services are the police, crossing guard, detectives, sheriff, and judge.

Other vital occupations are concerned with health and safety of the community such as road construction, maintenance work, health inspection, sanitation, fire control, and public supervision.

Local government officials, such as mayors and city council members, are excellent sources of information for public service careers.

A multitude of personnel with varied qualities and educational backgrounds are demanded to fulfill these important tasks.

Procedure

The variety of occupations involved in public service needs to be explained to the students. It would be a faculty decision to determine who would review and discuss the following list of vocations with the students:

ambulance driver
assessor
auditor
border patrol
bomb expert
bus driver
building inspector
counselor
census clerk
council member
civil service clerk
clergy
conservationist
city carrier
C.I.A. agent
city manager
civil defense worker
crossing guard
dietician

public health nurse
parole officer
judge
job corps employee
lawyer
librarian
miantenance worker
mayor
manpower trainer
meter patrol
military personnel
public utilities worker
parcel post carrier
probation officer
police
postmaster
park ranger
president of the United States
principal

detective
coroner
county clerk
court clerk
day care attendant
defense worker
district attorney
elected official
family and marriage counselor
fire chief
fire fighter
fire inspector
garbage collector
F.B.I. inspector
game protector
government scientist
government nurse
health inspector
highway maintenance person
immigration inspector
internal revenue worker
janitor
patent clerk
playground supervisor
mail clerk
recreation director
road inspector
safety engineer
sanitary inspector
social worker
school nurse
school secretary
snow plow operator
sheriff
state highway patrol
special delivery messenger
special agent
toll collector
teacher
technician
town clerk
traffic engineer
urban planner
welfare worker
warden

English:

Through organization by the English department, those students who would benefit from “hands-on” experience in teaching can serve as aides for elementary and prescriptive workshop teachers. They can gain valuable insight into the teaching profession by participating in this activity.

A subsequent assignment could involve these students in oral reports, sharing some of their experiences with other members of the class.

English/Social Studies:

As part of English or social studies, each youngster could be given the assignment of interviewing a local individual who is in a public service oriented occupation. As part of this assignment, each youngster can be responsible for writing reports describing what service this person performs and what education was necessary in order to qualify for this career. An appropriate outcome of this assignment would be student oral reports so that all members of the class could become familiar with this large variety of public service occupations. If available, in coordination with audio-visual aids and the arts department, youngsters should be encouraged to use the tape recorder and/or photographic equipment as aids in their interviewing.

Environmental Arts – Industrial Arts:

Students could build scale model replicas of police and fire stations demonstrating how planning is important to the successful operation of these two services. Appropriate research would have to be done so that the models would be realistic in their design.

As part of the fine arts program, students could obtain maps of local cities, boroughs, townships, etc., and idealistically set forth an urban renewal program to reconstruct an area so as to meet modern needs. Important factors in this regard would be mass transportation, housing, recreational facilities, and business districts.

Foreign Language:

As part of a cultural study of France, Spain, Germany, Latin America, etc., students could compare the public service opportunities of the United States as opposed to these different countries and cultures.

Health:

A valuable role-playing experience can take place in health class where students can anonymously ask questions to students and/or the teacher and the latter can attempt to provide answers in the simulated roles of family counselor, welfare case worker, social worker, etc.

Interdisciplinary Activity:

As a combined project in arts, science, health, and foreign language, groups of students could be assigned the project of researching and preparing a menu that would involve them in the type of work that is normally undertaken by a skilled dietitian. Specifically, this menu would have to be appropriate to one of the countries in which the foreign language they study is spoken. This criteria provides the students with a diverse number of geographical and cultural nations to investigate; e.g., the French language is spoken in many parts of the world that were once colonial possessions of France. Likewise, this same situation exists with the Spanish culture.

Mathematics.

One of the largest government agencies involved with service careers is the Internal Revenue Service. In order to give youngsters a clearer picture of this organization's operation, the math teachers could develop a lesson involving the simulated preparation of income tax forms. The Internal Revenue Service will provide the materials and upon completion of each youngster's tax return, another student can role-play the part of a tax auditor.

As a role-playing experience in class, the activities of a turnpike/parkway toll collector could be simulated. These particular employees are required to act efficiently and make change accurately and each day account for large sums of money.

Physical Education:

Youngsters could be encouraged to contact the F.B.I. and C.I.A. to obtain information regarding the physical requirements necessary for employment in either of these two areas.

Also the physical education faculty could give a "hands-on" project explaining different ways the military services successfully train their forces for physical fitness. These same exercises could possibly be adapted to the gym class.

Science:

Public services officials make extensive use of sophisticated communication devices such as the short wave radio. The science class could make a study of the history and development of this communication technique placing specific emphasis on its mechanical operation.

Social Studies:

In social studies, the decision and law-making process by local, state, and federal officials can be examined in conjunction with the study of our modern government's evolution. Simulation games are available to enhance this activity. Particular reference can be made to the various elected officers as well as political and judicial appointments, all of whom function in this important process for the welfare of the general public.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Magazine
King Features, New York, New York

Filmstrips:

Careers in Public Utilities
Community Services
Government Service
Law Enforcement
Food Service
Social Work
Pathescope Educational Films, New Rochelle, New York

Films, Speakers, and/or Literature:

Federal Bureau of Investigation
Mr. J. Wallace LaPrade, Special Agent in Charge
Gateway 1, Newark, New Jersey 07102 – 622-5613, etc. 265
60 days notice.

Civil Service, Job Information Bureau
Mrs. J. Hendricks – 645-2376, Newark, New Jersey

Internal Revenue Service, c/o Public Affairs Office
P.O. Box 1261, Newark, New Jersey 07101 – 645-3894
Mr. Paul Buzzell – 60 days advance notice.

Speakers and/or Trips:

Chief of Police and/or police officer, speakers
New Providence Police Department

Emergency Squad, New Providence
Will provide speaker and demonstration.

Armed Forces, local recruiting officials
Speakers and films.

Lawyer, local New Providence resident.

Postal employees, local New Providence post office
Speaker and film.

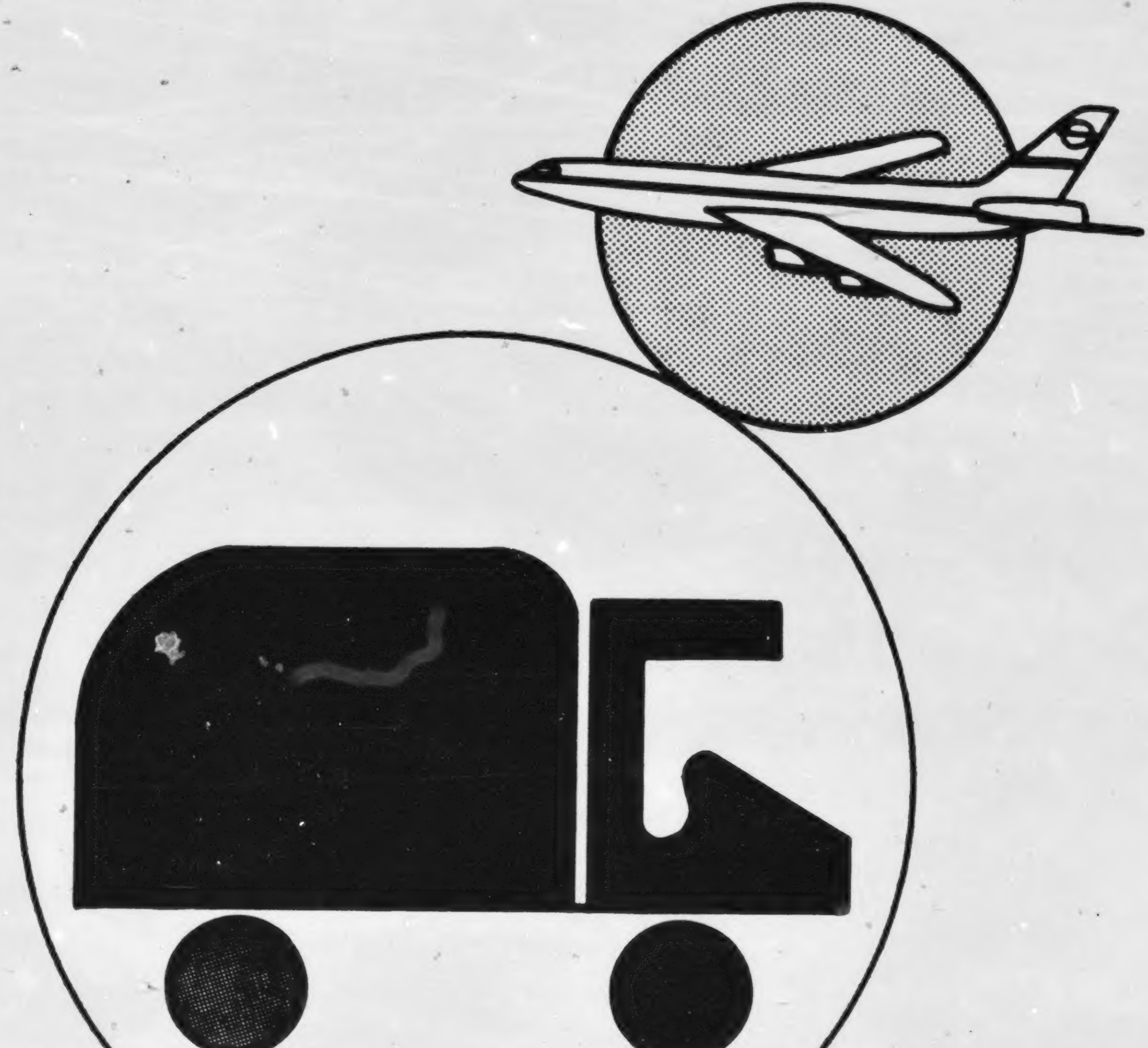
Mayor of New Providence (if possible).

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the public service careers cluster and list the educational and personal requirements. This activity could be designed as a project in almost all of the disciplines mentioned in the procedure.
2. It is anticipated that students with specific interests in public service careers would be encouraged to contact the career development team for more specific guidance and information.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

TRANSPORTATION



Transportation Cluster

The transportation industry offers a variety of occupations dealing with automobiles, buses, trains, ships, and aircraft. Children are familiar with the community services involved in this cluster; however, there are many other vocations directly and indirectly related to the transportation world.

Inspection and manufacturing of automobiles and equipment demand a diverse number of skills. Responsibility for safety and efficiency are also a vital part of many other careers in the transportation industry.

As we continue to embark on new horizons in space travel, a vast number of job opportunities will become available in this area.

Procedure

The variety of vocations involved in transportation careers needs to be explained to the students. Since transportation is continually involved in every facet of education, the faculty could come to a decision as to who would discuss and consider the following list:

aeronautical engineer
air line flight attendant
airport ground controller
air route controller
air traffic controller
armored car driver
auto assembler
auto mechanic
auto slipcover installer
auto speedway operator
automotive engineer
automotive parts technician
barge captain
body repair technician
brake operator
bus driver
captain
car salesperson
chauffeur
conductor
co-pilot
crew chief
deck hand
deck officer
dispatcher
dump truck driver
longshore worker
mariner
mechanic
new car inspector
oiler
parking lot attendant
pilot
railroad clerk
railroad conductor
reservation clerk
safety engineer
sailor
service station attendant
schedule maker
ship builder
ship engineering officer
ship captain
ship cook
ship steward
shipping clerk
stevedore
steward
switch operator
taxicab driver
telegrapher
ticket agent

engineering officer
ferryboat operator
flight engineer
furniture mover
ground controller
ground radio operator
ground service
locomotive engineer
tower worker
track operator
traffic manager
travel clerk
travel counselor
travel guide
truck driver
utility person

English:

Students can be assigned the reading of a fiction or non-fiction book with specific involvement with the transportation cluster. Oral and written reports would then be planned as the concluding activities. Examples: *Airport, The High and the Mighty, Titanic, Poseidon Adventure, Biography of Henry Ford.*

Students might also be encouraged to watch television specials and view local movies involving transportation. Subsequent oral reports and discussions could be based on this out-of-school activity. Teachers would provide specific outlines so students' reports would contain relevant career information; e.g., the nature of the presentation, plot, characters, and vocation portrayed. What did you learn about the career?

Environmental Arts – Fine Arts:

In the arts class a unit could be developed concerning the different types of food that are prepared and served by air lines, trains, etc. Explanations could be made as to why these kinds are most desirable.

Students could also be encouraged to design automobiles and provide explanation as to why they believe their particular model is both aesthetic and utilitarian.

Environmental Arts – Home Economics:

An examination of air line food services could be coordinated with a trip to Newark International Airport. A culminating activity would be a classroom "hands-on" demonstration of preparing food in ways demonstrated during the visitation.

Environmental Arts – Industrial Arts:

The construction of a scale model highway interchange demonstrating the need for planning so that traffic flows smoothly could be undertaken. Examples: New Jersey Turnpike interchange at Newark Airport, the intersection of I-80 and I-95 at the George Washington Bridge.

Blueprint designs of a functional airport arrival and departure area can be developed, with specific consideration for public access and convenience as well as air line needs.

Foreign Language:

Students can write to Exxon U.S.A. – Standard Oil of New Jersey, International Operations, and request road maps of European countries and simulate the responsibiliites of a European travel guide, chauffeur, travel agent, bus driver, or taxicab driver.

Health:

In health class discussions could be developed concerning the personality traits and personal skills needed for success in the careers which are related to transportation. Examples: flight attendant, taxicab driver, travel guides, etc.

Mathematics:

As part of the math class, a concentrated effort can be initiated and maintained in the study of transportation oriented problems, involving such formulas as $D = RT$, etc. This type of activity will serve to integrate the math class into the career development program, especially in the transportation cluster.

Music:

Various kinds of music are played at air line terminals. Classes can investigate the effects of this music on passengers.

Physical Education/Health:

Discuss the causes of travel sickness and distress on land, sea, and air. What effective preventative measures can be taken?

Science:

In science class, studies can be made of the different transportation devices; e.g., combustible and rotary engines, diesel and steam locomotion, conventional and jet-powered aircraft, nuclear-powered shipping, etc.

Social Studies:

In conjunction with the New Providence eighth grade social studies consideration of the Industrial Revolution, a study can be made of the history of transportation and its continuing importance in the modern age. *The Challenge of Change* textbook can be used as the background for this study. The railroad, automobile, sea and air line shipping industries can be studied in depth.

The social studies classes can take advantage of the transportation game, "On the Move," developed by the Delta Nu Alpha transportation fraternity. It illustrates the broad scope of occupations and people necessary to make the transportation industry function. Directions and explanation of the game follow in this unit.

Materials

Career World Magazine (delivered monthly)
Curriculum Innovations, Highwood, Illinois

Popeye Series – Career Awareness Program
King Features, New York, New York
Call collect 212 – 682-5600, ext. 321.

Filmstrips:

Transportation
Pathescope Educational Films, New Rochelle, New York

Aviation – Where Career Opportunities Are Bright
Federal Aviation Administration, Film Library
AC-444 (free loan)
Box 25082, Oklahoma City, Oklahoma 73125

Job Opportunities
Encyclopedia Britannica Education Corporation
Chicago, Illinois ($22.00 each)
truck drivers, route persons, truck/bus mechanics, automotive mechanics, flight attendants, airplane mechanics

Speakers and/or Trips:

Delta Nu Alpha Fraternity
Transportation speaker, William Dahms, Co-Chairman
105 Ridge Road, Cherry Hill, New Jersey 08034
609 – 429-4391
Mr. John Hart, I.V. Program – 939-9000, ext. 615

Port Newark Facility, Newark Airport
Contact Ms. Helen Hale – 961-2066
8 a.m. – 10 a.m., 3 p.m. – 4 p.m.

Mr. G. W. Eastland, Manager Public Affairs
Erie-Lackawanna Railroad, Hoboken, New Jersey – 659-2000
Speaker and possibly film.

Mr. Moray Epstein, Director Office Information Services
1035 Parkway Avenue, Trenton, New Jersey 08625
Speaker and visuals;
Additional source: Mr. J. Gartlant, Department of Transportation
609 – 292-3105
Mr. Lee Fisher, Department of Transportation – 648-2523

Transport of New Jersey
Mr. Purchase – 622-7000, ext. 296
Speaker and visuals

Eastern Airlines
Mr. Dubois – 212 – 956-4033
Speaker, slide demonstration
Mr. DeBrigard, Woodbridge Office, 494-2108

See Appendix for list of additional materials.

Culminating Activities

1. Students should be able to describe in detail one career related to the transportation career cluster, and list the educational as well as personal requirements. This activity can be done as a writing experience in the English classes.
2. It is anticipated that students with specific interests would be encouraged to contact the career development team for more information and guidance.
3. Within the classroom setting it is hoped that teachers can further channel assignments to complement this career theme.

ON THE MOVE RULES

(A Game of Transportation)

1. Two to six players may play the game.

2. Each player receives $2,500 in the following denominations:

    1 – $1000.00
    1 – 500.00
    5 – 100.00
    6 – 50.00
    7 – 20.00
    6 – 10.00

3. Each player is to select a different token.

4. A player contracts to deliver a quantity of goods from the "point of origin" to the "destination." He does this by selecting the top card from the "Industrial Traffic Manager" pile and if the card has options (air, rail, water, truck) the player may select whichever means he wants. He puts the card in front of him and rolls the dice. If the Industrial Traffic Manager's card has no option but indicated what method of transportation a player is to select, then the player must use that means to ship the cargo. Once a player selects a card and rolls the dice he cannot change his mind.

5. A player rolls dice to see how many places he is to go. Players are to take turns in a clockwise direction.

6. **Terminals**

    a. If a player lands on a terminal he may buy that portion of the terminal from the bank for the purchase price shown on the board.

    b. If another player lands on that terminal that is owned by someone else, he must pay the service charge which is shown on the owner's card.

    c. If a player owns all four parts of a terminal (air, rail, water, truck) he may exchange all four cards for a single owner's card and build a warehouse and pay the bank its construction price shown on the card. An opposing player landing on a terminal with a warehouse must pay the warehouse fee.

    d. If a player owns all four terminals but has not built any warehouses and an opposing player lands on one of these terminals, the player must pay the service charge only.

e. A player in need of money may sell the terminal or warehouse back to the bank for one-half the purchase price.

f. A player may sell his part of the terminal to another player for whatever price he can get or exchange it for what he considers the best deal.

7. **Report to Dispatcher**

   a. If a player lands on a place that indicates he reports to dispatcher, he must select the card from the pile. There are four dispatchers, one for each method of transportation. The player must select a card from that pile in which he is transporting the cargo.

   b. For example, if a player has contracted to deliver a carload of goods by AIR and lands on the spot "report to dispatcher" he must select a card from the dispatcher pile labeled AIR.

   c. The player must follow the directions on the card. A player is to go directly to the place indicated on the card.

8. **When a Player Arrives at Destination**

   a. When a player goes completely around the board and arrives at "destination" which is the starting point or "point of origin" he collects the contracted fee from the bank and returns the Industrial Traffic Manager card to the bottom of the pile.

   b. Example: If a player is on a New York truck terminal he must roll a three on both dice or a three on one of them to arrive at the destination. If he does not roll the number he waits his next turn.

   c. When a player does arrive at his "destination" the sequence of events is this:
      (1) He collects his contracted fee from the bank, then returns the Industrial Traffic Manager card to the bottom of the pile.
      (2) He waits his next turn.
      (3) At his next turn he selects a card from the top of the Industrial Traffic Manager pile and selects the mode of transportation and then rolls the dice.

9. If the owner of a terminal fails to notice that a player lands on his property, he cannot charge him a service charge or warehouse fee after the next player in turn rolls the dice.

10. Any business deals, trades, etc., can be initiated only during a player's turn.

11. The bank never goes bankrupt, it always has enough money to meet its obligations.

APPENDIX

APPENDIX: ADDITIONAL MATERIALS

A. W. Peller and Associates
Educational Materials
13-00 Plaza Road, Fairlawn, New Jersey 07410

"Career Clusters: An Introduction"
G4-CT

Baker and Taylor
Audio-Visual Service
P.O. Box 230, Momence, Illinois 60954

"Posters on Newspaper Careers"
18ST – $3.50
"Posters on Local Government Careers"
18ST – $3.50

Curriculum Innovations
501 Lake Forest Avenue, Highwood, Illinois 60040

"Career World" magazine
25 copies/month, $2.95/student
$73.75 Total

Choosing Your Career
20 Railroad Avenue, West Haven, Connecticut 06516

Career Boxes
Environmental Control
Business Office
Communication and Media
$100 Total

Eye Gate House
146-01 Archer Avenue, Jamaica, New York 11435
212 – 291-9100

252 – "Focus on the Creative Arts" – $42.65
253 – "Focus on the Performing Arts" – $42.65
255 – "Focus on the Professions" – $42.65
$127.95 Total

Educational Progress Corporation
P.O. Box 45663, Tulsa, Oklahoma 74145

Career Games
$78.50

Guidance Associates
41 Washington Avenue, Pleasantville, New York 10570

"People Who Create Art" – 2K301786 – $37.50
"People Who Make Things" – 2K301844 – $37.50
"People Who Organize Facts" – 2K301828 – $37.50
"People Who Influence Others" – 2K301869 – $37.50
"People Who Work in Science" – 2K301588 – $37.50
"People Who Help Others" – 2K301687 – $37.50
$225.00 Total

Houghton-Mifflin
Hopewell-Pennington Road, Hopewell, New Jersey 08525

"Livelihoods" Careers for Your Lifestyle" – #9-60150
$150.00

"Occupational Cluster Posters" – #9-60140
$15.00

"Career Opportunities Boxes"
  English – #9-60120 – $48.00
  Social Studies – #9-60122 – $48.00
  Mathematics – #9-60124 – $48.00
  Foreign Languages – #9-60126 – $48.00
  Science – #9-60128 – $48.00
$240.00 Total

Murphy, Levy, Wurman Publishers
1214 Arch Street, Philadelphia, Pennsylvania 19107
or
Yellow Pages Career Library
National Association of Elementary School Principals
P.O. Box 9114, Arlington, Virginia 22209

"Yellow Pages Career Library"
(50 career titles)
$25.00/12 titles now in print

Pathescope Educational Films
71 Weyman Avenue, New Rochelle, New York 10802

nursing
sales
education
agriculture
repair work
automotive service
public utilities
business office
beauty and fitness
banking and insurance
electronics
armed forces
non-traditional careers for women

$42.00 each – $546.00 Total

Random House, Inc.
Order Entry Department
400 Hahn Road, Westminster, Maryland 21157

"Adventures in the World of Work"
6 filmstrips, $76.53
"Who Works for You"
6 filmstrips, $76.53

Scholastic Book Services
904 Sylvan Avenue, Englewood Cliffs, New Jersey 07632

"Discovery"
#3596 – logbooks and filmstrips
$149.50 Total

Science Research Associates, Inc.
259 East Erie Street, Chicago, Illinois 60611

Job Family Series booklets
#5-600 – set of 20 booklets
$24.25 Total

Society Visual Education
1345 Diversey Parkway, Chicago, Illinois 60614

"American Urban Crisis"
#J202SAR – 6 filmstrips
$52.50 Total

"Evolution of American Industry"
(On order Hillview audio-visual budget)

Visual Publications
716 Center Street, Lewiston, New York 14092

"Man Must Fly"
Sound program – 4 filmstrips and handbooks
$64.00 Total